Reinventing the Campus: Inclusion for All Through an Understanding of Learning Disabilities

by

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Dalhousie University is located in Mi'kmaq'i,
the ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

For Grammy and Grandad

Contents

Abstract

Reinventing the campus is about making the university campus more inclusive and welcoming for everyone through better understanding and accommodating individuals with Learning Disabilities (LDs). The thesis tests this hypothesis on Dalhousie University's Sexton Campus in Halifax, Nova Scotia, hoping that the result will not only be inclusive for everyone but will relabel the campus as a critical part of the urban domain and not function as an exclusive and separate institution.

By understanding LDs and how to accommodate them, the same principles of accommodation and support apply to everyone. The thesis uses the architectural principle of Inhabited Circulation to integrate LD accommodation with the public. Using Inhabited Circulation as the primary design strategy through the scales of the city, the campus, and the individual/student experience will truly reinvent the campus for the better.

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Chapter 1: Introduction

Figure 1: Sexton Campus Student Accessibility Centre

The Issue

When you think of post-secondary school architecture and specifically Campus Architecture, you may envision lecture halls, study commons, and a library. Or you may think of the campus as a whole collection of buildings, all with unique characteristics. This type of architecture should serve everyone and help to ensure success in learning. However, the way these buildings and programs are organized spatially has inadvertently excluded those with diagnosed Learning Disabilities (LDs). Most universities have departments for accessibility and accommodations; however, they most often result in separate structures with no physical connections or relations to widely- used buildings on campus. Additionally, they often result in spaces with unrecognizable inhabitation or functionality. For example, seen on Figure 1, the Student Accessibility Centre on Dalhousie University's Sexton Campus, is simply a door with frosted windows tucked away in a narrow corridor.

Universities should be symbols of inclusivity and diversity. Often a university is characterized by its educational spaces such as an extensive library, a grand lecture hall, a lab, or state-of-the-art workshops and laboratories. These spaces traditionally symbolize the ways in which students successfully meet or go beyond their educational goals on campus.

But consider if individuals diagnosed with LDs feel excluded from these spaces of higher learning. For this group, the university becomes a place that demotivates rather than one that motivates and supports.

The Most common approach to addressing disability on campus has been to focus on solutions with respect to physical disabilities. However, disability includes all types of impairments, such as neurological and non-physical. Commonly, disability on Campus has been addressed in the form of physical disabilities. The university must demonstrate that it understands the full definition of the terms “Disability,” “Accessibility,” and “Accommodation” to be truly inclusive.

The thesis is on Dalhousie University’s Sexton Campus in Halifax, Nova Scotia (Figure 2). The thesis aims to create a strategy and a series of design interventions to reinvent the idea of the campus through a need to include and accommodate people with LDs. Additionally, the thesis demonstrates that the attempt to solve one issue creates opportunities to solve others. Specifically, aims to reinvent the campus not as a private or exclusive institution but as a necessary component of the urban realm (the public).

Inhabited Circulation is the primary design principle for the thesis to reinvent the campus for inclusivity successfully. Inhabited Circulation allows for the activities, programs, and functions of architectural spaces on campus to be identified clearly – specifically as inclusive and welcoming while everyone moves through it.

The thesis results in three major design interventions on Sexton Campus. The first is a new urban park which will stitch the campus into the urban realm of Halifax. The second is a set of three circulatory bridges which connect to existing university buildings and connect to the final intervention, the Welcome and Accessibility Centre.

Thesis Question

How can the campus be reinvented to ensure a more inclusive and supportive environment, not just for people with Learning Disabilities but everyone?

Structure of the Thesis

Chapter 2 will introduce the definition of Learning Disabilities, how they are identified by professionals such as psychologists, and what government acts (legislation) and rights regarding accessibility are in place in Canada and Nova Scotia. This chapter also addresses significant challenges facing individuals with LDs, such as the stigmatization and the effects of improper labelling.

Chapter 3 looks at the intersection between architecture and disability. It is evident that not much has been explored on the intersection between LDs and architecture, but there is evidence that architecture supports and serves physical disabilities. Taking insight from David Gissen's book, "The Architecture of Disability," the chapter looks at a comparison between successful and unsuccessful architecture for physical disability, the role of setting up a suitable condition (environment) for the impaired, and the importance of consulting the impaired when designing spaces for disability.

Chapter 4 will examine the "Campus Pattern" and how it evolved through time. It will look into how the pattern has affected the layout of Sexton Campus. This chapter goes into the case study, Gallaudet University, on how it functions and supports as a learning environment for individuals who are deaf and hard of hearing.

Chapter 5 reiterates that the thesis is located at Dalhousie University and therefore stresses the specific guidelines

and legislation Dalhousie University has in place to support LDs, much of which is set out by the Dalhousie Accessibility Office. The chapter concludes with an interview with Jen Davis, who works at the Dalhousie Accessibility Office. The interview includes insights into the world of LDs, rising challenges for LDs, and what services and programs might be helpful for a more inclusive campus environment.

Chapter 6 introduces the design strategy of Inhabited Circulation. It examines inhabited circulation at three scales - the scale of the city, the scale of the campus, and the scale of the individual/student experience. Finally, the chapter introduces the design interventions (using the scales of inhabited circulation).

Chapter 7 shows the result of each design intervention; the Welcome and Accessibility Centre, the Inhabited Circulatory Bridges, and the new urban park within Sexton Campus. This chapter looks at crucial moments and studies of how the interventions use inhabited circulation in the form of detailed plan, section and 3D representations. The chapter concludes with a master plan showing how the three interventions work together on campus.

Chapter 8, the conclusion, reflects on the design strategy and the result of reinventing the campus to include everyone. Commentary is made on what could be investigated further in the next life of thesis.

Figure 2: Sexton Campus site map

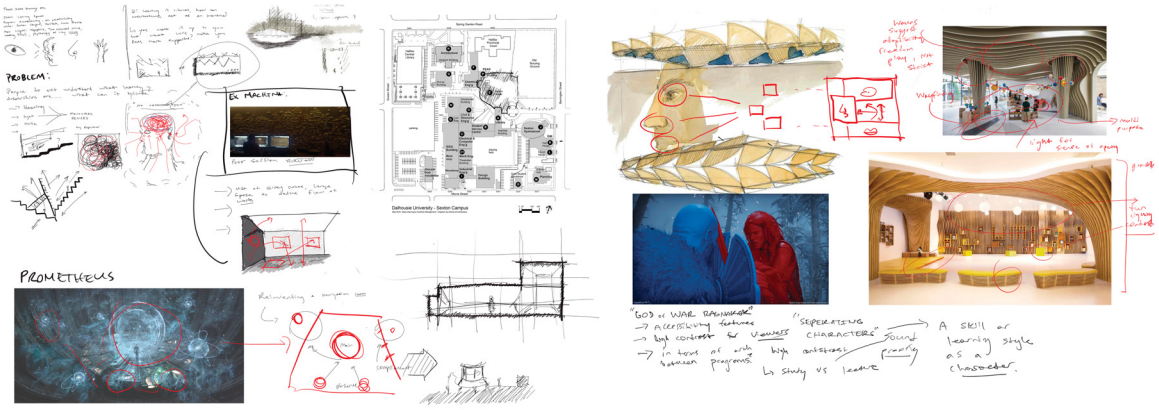


Figure 3: Illustrative Mind Map exploring LDs and Architecture

Figure 4: Mind map exercise: which subjects or fields apply

Chapter 2: Learning Disabilities (LDs)

Range of LDs

Learning Disabilities (LDs) are neurological disorders that impair the brain's ability to store, process, retrieve or communicate information (LDAC 2022). These impairments impact skills and learning functions of the mind, such as cognitive, language, motor, and social abilities. From the Learning Disabilities Association of Canada, LDs are lifelong and invisible (LDAC 2022). There is a whole range of LDs, and many may not have a label but rather a description of significant learning weaknesses (Figure 5).

The cause of LDs is unclear, but it is assumed that biologically based cognitive deficits or cognitive dysfunctions (which impact significant areas of academic skill) are the primary sources (Buttner and Hasselhorn 2011, 79). There is no precise reasoning of the root cause of an LD because the relation between cognitive dysfunctions and specific LDs needs to be clarified, as there needs to be more research on the link (Buttner and Hasselhorn 2011, 79).

Throughout history, a more general approach has been taken to notice and diagnose an LD, when an "unexpected" academic underachievement appears in one or more of the four main areas of academic learning (Figure 6), oral language, reading, written language and mathematics (Government of Canada 2022).

Assessing LDs

For LDs to be recognized, LDs must be diagnosed by a professional and assessed at the individual level. Therefore,

Type of LD	Area of Difficulty	Trouble with	Examples of Challenges
Dyslexia	Processing Language	Reading, writing and spelling	Letters and words may be written or pronounced incorrectly
Dyscalculia	Math skills and concepts	Computation, math facts, concepts of time, money, etc	Trouble with counting and counting in multiples
Dysgraphia	Written expression	Handwriting, spelling, expressing ideas on paper	Organizing ideas and expressing thoughts on paper
Dyspraxia	Fine motor skills	Coordination and manual dexterity	Trouble with using scissors, buttons, drawing and typing
Auditory Processing Disorder	Interpreting auditory information	Language development and reading	Multiple people talking at the same time cannot tell which one to listen
Visual Processing Disorder	Interpreting visual information	Reading, writing, and math	Trouble with distinguishing letters like h and n
Attention Deficity Hyperactivity Disorder	Concentration and Focus	Over-activity, distractibility and/or impulsivity	Cannot sit still, trouble with prioritization, daydreaming
		Information Processing Disorders	Other Related Disorders

Figure 5: LD Terminology Chart (LDAC 2023)

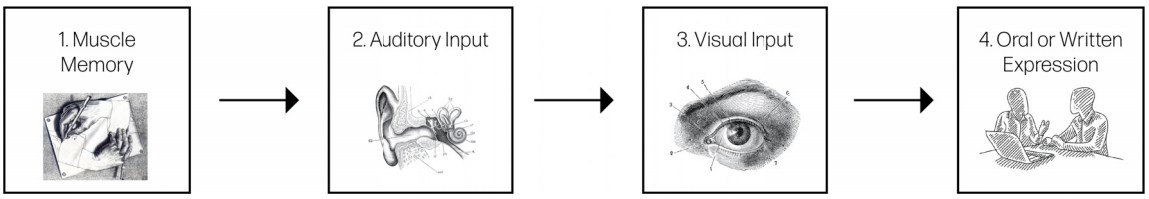


Figure 6: Phases of Learning

Abilities	Oral Language	Reading	Written Language	Mathematics
Description	Affect listening, speaking, understanding speech and memory of things presented orally. These difficulties can include problems in differentiating sounds, discriminating sounds from background noise and sequencing sounds (other terms used are auditory processing difficulty or oral comprehension problem).	Affect decoding, phonetic knowledge, word recognition, comprehension, and memory of things perceived visually. These difficulties can include visual-perceptual problems such as shape discrimination (e.g., seeing the difference between similarly-shaped letters), sequencing letters or words (e.g., reversing letters), and discriminating an image from its background (other terms used are dyslexia or visual-perception problem).	Include problems organizing ideas or material to be written and poor spelling (other term used is dysorthography), syntax and grammar.	Affect computation and problem-solving. These difficulties can include reversal of digits, poor memory for quantitative symbols, and errors in writing numbers or aligning columns (other term used is dyscalculia).
Main Challenges	Oral concepts and oral information. Sound differentiation.	Written information and visual presentations. Shape differentiation.	Trouble with expressing written information. Or even presenting information visually.	Computation and math problem solving. Poor grasp on remembering symbols, concepts and formulas.

Figure 7: Abilities Chart (Government of Canada, 2022)

it is essential to understand the assessment of the LD made by a professional and by taking into account the impaired individual's perspective on the diagnosed LD. The Government of Canada's "Guide for Assessing Persons with Disabilities - How to Determine and implement assessment accommodations - Learning Disabilities" states:

> Although the person with the disability is always the first source of information on his or her functional limitations and needs, in some cases, additional documentation from a qualified professional will also be necessary to determine appropriate accommodations. It is important to stress that such professional documentation or report is not required as a proof of a diagnosis of the disability. It is required because, in some cases, a clear description of the nature and extent of functional limitations requires knowledge that only professionals in the field possess. (Government of Canada 2007)

In other words, it is crucial to have a balanced understanding of the individual's self-assessment of the LD and a detailed diagnosis report from a professional to make the challenges set out by the LD more clear and understandable. Having this information helps in the development of accommodations and tools that best suit the LD. For example, at the university level, to apply for an accommodation plan, the university needs to collect information about the LD from the individual's perspective and a series of documents about the diagnosis from a qualified professional, such as a psychologist (Government of Canada 2007). Overall, the information will lead to a better understanding of the various strengths and weaknesses of tasks concerning the four areas of learning: oral language; reading; written language and mathematics (Government of Canada 2007).

Government Acts for Disability

LDs are actual disabilities. Disability is not limited to physicality; it includes all. If there is support for physical

disabilities, there is support for learning disabilities. For instance, the Government of Canada has the Accessible Canada Act, which recognizes the existing human rights framework that supports quality for people with disabilities in Canada (Canada Accessibility Act 2020). Specifically, from Bill C-81 in the Canada Accessibility Act:

> The Government of Canada consulted with Canadians from July 2016 to February 2017 to find out what an accessible Canada means to them. On June 20, 2018, the Government introduced Bill C-81, An Act to ensure a barrier-free Canada (The Accessible Canada Act) in Parliament. (Government of Canada 2019)
>
> Definition of a disability: “means any impairment, including a physical, mental, intellectual, cognitive, learning, communication or sensory impairment – or a functional limitation – whether permanent, temporary or episodic in nature, or evident of not, that, in interaction with a barrier, hinders a person’s full and equal participation in society. (Government of Canada 2019)

Not only is it a requirement of our society to recognize and respect disability, but disability support is a part of the Canadian Charter of Rights and Freedoms and the Canadian Human Rights Acts (Government of Canada 2022).

At the provincial level, the “Act Respecting Accessibility in Nova Scotia” has its own goals and guidelines to make Nova Scotia more inclusive and barrier-free by 2030. This act has six accessibility standards currently under development for an accessible Nova Scotia (Act Respecting Accessibility in Nova Scotia & Accessibility Services Canada 2017). These standards apply to:

- 1. Goods and services
- 2. Information and Communication
- 3. Transportation
- 4. Employment
- 5. Education
- 6. Built Environment

Ways to Support Learning Disabilities

Accommodation plans or arrangements for LDs can be made. There is no “master” format to follow to accommodate learning disabilities. However, it is suitable for an institution, such as a university, to have various tools, services, and support for accommodations. For instance, the challenges LDs present can be lessened through alternative learning and modifications (LDAC 2022). For example, accommodations could include extra time for exams, oral exams, taped books, screen readers, and voice-activated writing tools (LDAC 2022).

For context, the organization “Ontario Universities - Accessible Campus” has proposed tips to support students with LDs in a classroom, before the start of a course, when the course begins, and while in session (AccessibleCampus.ca 2022). The list of suggested accommodations is extensive. Here are some sample recommendations and tips:

- In the classroom or laboratory: Avoid making assumptions about a person’s disability or capabilities; many persons with disabilities talk about being frustrated with people assuming what they can or cannot do. Remember that although persons with disabilities might have specific needs, every individual is different.
- Prior to the start of the course: Choose course materials early. This will allow enough time for you to convert the documents into alternative formats, or for students to request the formats they need.
- If possible, provide advance course notes, copies of overhead slides, PowerPoint presentations and other materials.
- Provide both verbal and written instructions with reminders of impending due dates for assignments or exams.
- Allow scheduled breaks during lectures, tests and exams.

- Allow for the use of adaptive technology.
- Point out the important sections in course plans, textbooks and readings to guide test and exam preparation; when possible, provide samples of tests and exams.
- Provide personal feedback on academic performance.

Each university has its approach and division to accommodations but the primary goal is the same, to make those with accommodations feel included and supported. As this thesis is located at Dalhousie University, Dalhousie follows the accommodations set out by the Accessibility Office. Chapter 5 covers the accommodations Dalhousie offers and has insight into LDs from an interview with a member of the Dalhousie Accessibility Office.

How Do We Learn?

LDs relates to the ability to learn. Therefore, it is essential to understand how learning works, whether one is diagnosed with an LD or not. According to *Learning Disabilities: Contemporary Viewpoints* (Cratty and Goldman 1996, 38), the nature of learning must be understood to provide more context to understanding an LD. Specifically, in an interview with Dr. James Gardner, he states, “We first need some understanding of how the learning process works before we can understand learning disabilities. Initially, there is input. This may include visual, auditory, kinetic-tactile, or proprioceptive input” (Cratty and Goldman 1996, 38). Generally, the functioning of learning is played out in four steps; 1. Muscle Memory (recording information by writing, or other means, such as movement in an organized sport). 2. Auditory Input (taking in a discussion or lecture). 3. Visual Input (such as looking at a presentation). 4. Oral or

Written Expression (Applying what has been taught such as presentation, a written test or an assignment).

As for how an LD presents challenges for the learner, it is a matter of the individual's range of abilities and capacity to learn. The book *Specific Learning Disabilities* states: "People have different learning aptitudes. The capacity for academic learning differs in the same way as the abilities to run, throw a ball, or create art differ. Some people learn some subjects faster than others..." (Frank 2014, 1). Everyone has different strengths, speeds, and weaknesses regarding learning abilities. However, it is to say that despite learning challenges, it is still necessary to accommodate and guide those with LDs in what works for them (Frank 2014, 1).

Learning Styles

There are theories of learning styles; everyone approaches learning differently regardless of whether they have a learning disability. For example, the publication *Psychological Science in the public interest: a journal of the American Psychological Society* (Pashler et al. 2008, 105-119) says:

> The term ''learning styles'' refers to the concept that individuals differ in regard to what mode of instruction or study is most effective for them. Proponents of learning-style assessment contend that optimal instruction requires diagnosing individuals' learning style and tailoring instruction accordingly. Assessments of learning style typically ask people to evaluate what sort of information presentation they prefer (e.g., words versus pictures versus speech) and/or what kind of mental activity they find most engaging or congenial (e.g., analysis versus listening), although assessment instruments are extremely diverse. The most common—but not the only—hypothesis about the instructional relevance of learning styles is the meshing hypothesis, according to which instruction is best provided in a format that matches the preferences of the learner (e.g., for a ''visual learner,'' emphasizing visual presentation of information). (Pashler et al. 2008, 105-119)

Despite being diagnosed with an LD, individuals may have a preferred learning method that works best for them,

and which may not necessarily be what is recommended. Therefore, we should help accommodate, guide, and develop the learning the individual prefers instead of forcing a strict methodology. In some ways, this is a way the advice and services given to those with LDs are “included” in the wider pool of education.

Learning by Doing

Figure 8: Students making baskets out of willow (Ingold 2013, 24)

An example of a learning style is seen in the chapter “The Materials of Life” in the book by Tim Ingold, *Making - Anthropology, Archaeology, Art and Architecture* is Learning by Doing. An experiment on the practice of active learning had a group of Ingold’s students (Ingold was an Anthropologist Professor) making baskets out of willow (Figure 8) near Aberdeen beach in northeast Scotland to see what the students would learn about basket making if they tried it for themselves:

> We were learning to make baskets out of willow, under the direction of anthropologist and craftsperson Stephanie Bunn. To form a frame, an odd number of lengths of willow were stuck vertically into the ground to form a tough circle, tied at the top. (Ingold 2013, 22)

Figure 9: Willow basket result (Ingold 2013, 25)

The results explained by Ingold (Figure 9):

> At last, then, we could lift the woven construction from the ground, and turn it upside down to reveal that what we had made was indeed a basket. Each basket was different, uniquely reflecting the mood and temperament, as well as the physical stature, of its maker. Finally the students straggled off into the gathering duck, proudly bearing homeward the baskets they had made. Later they would tell me that they had learned more from that one afternoon than from any number of lectures and readings. (Ingold 2013, 22)

Stigma of LDs and Inclusive Education

Cognitively impaired and LD-diagnosed individuals have expressed poorer educational and occupational outcomes than their peers. Often, this is because of improper

collective labelling of learning disability conditions and the incorrect uses of “inclusive education.” The paper *Inclusion and Students with specific learning difficulties: the double-edged Sword of Stigma and teacher attributions* goes over the various effects of the LD stigma and improper labelling of LDs but emphasizes that sometimes, the educational environment for LDs is more exclusive for individuals with LDs despite attempts, especially by teachers, to be more inclusive.

Stigma and Labelling

Further explained in *Inclusion and Students with specific learning difficulties: the double-edged Sword of Stigma and teacher attributions*, stigma refers to when people are labelled and linked to undesirable characteristics, which constructs a rationale for devaluing, rejecting, and excluding the stigmatized (Woodcock and Moore 2021, 340). For example, a negative label or stereotype for LDs could consist of devaluing the diagnosed LD person among their peers with “normal” auditory functionality. In addition, this label may contribute to negative cultural beliefs that this kind of stereotyping is acceptable and that more labelling similar to this should be encouraged (Woodcock and Moore 2021, 340). Another example of improper stereotyping is categorizing the LD impaired as “lesser” and “inadequate” compared to others.

Often these labels, stereotypes and negative assumptions result in people being excluded from taking part in the mainstream and create negative emotional and experiential consequences (Woodcock and Moore 2021, 340). However, when used in a more positive context, labels and, more importantly, definitions of what LDs are can provide

opportunities for us to help and accommodate people with LDs more in the mainstream rather than exclusively.

Woodcock and Moore's paper explains teachers' shared understanding and use of LD labels and definitions, primarily resulting in more exclusive solutions than inclusive ones. This is because of teachers who think their methods of current accommodation do not have a particularly stigmatizing or negative effect (Woodcock and Moore 2021, 340). For example, an exclusive accommodation may be perceived as putting a student in a "special" room separate from everyone else for taking a test, even though the separate room may help the student's LD challenges.

Takeaways

Disability is not only limited to the physical, it includes all. Unfortunately, LDs are invisible and have had the most trouble in being understood and accommodated in a timely way. Perhaps this is because there is no immediate definition of the cause or issue compared to a physical disability. It cannot be seen, but with awareness it can be understood.

We have learned that LDs come in the form of significant weaknesses in the four areas of academic learning (oral language, reading, written language and mathematics) and in the form of challenges in the four primary ways in which we learn (muscle memory, auditory input, visual input, and oral/written expression). Therefore, accommodations can be arranged with the help of a written assessment made by a professional and a self-assessment from the LD individual of how the LD affects their everyday life.

People with LDs are not lesser than non-diagnosed people. They have additional needs, but the potential to perform well

and succeed is the same. There needs to be a better way to frame accommodation to be inclusive rather than exclusive. For example, the services provided for LDs on a campus should be seen as part of the overall university network, not as a “special” offices and spaces tucked away from the campus’ widely used buildings and spaces. Accommodation services must be conscious that they are adding towards inclusive education rather than exclusive education.

Chapter 3: Architecture and Disability

The Terms Disability and Accessibility

> Definition of a disability: “means any impairment, including a physical, mental, intellectual, cognitive, learning, communication or sensory impairment – or a functional limitation – whether permanent, temporary or episodic in nature, or evident of not, that, in interaction with a barrier, hinders a person’s full and equal participation in society”. (Government of Canada 2019)
>
> Definition of Accessibility: “Accessibility refers to the design of products, services, or environments for people who experience disabilities”. (Accessibility Services Canada 2023)

Often the association of the word “disability,” or explicitly accommodating for one, leans towards physical disabilities. This association is easily made as physical disabilities are often visible. In architecture, some examples of accommodating physical disabilities include ramps for wheelchair access, textured labelling for the blind, enlarged spaces for effective use of ASL (American Sign Language) and many more. When the disability is visible, we can therefore make an association between the accommodation and the condition.

It only takes a quick look at the architecture that surrounds us today to notice that there is a recognition of creating accommodations for physical disabilities, and there continues to be an improvement in understanding physical disabilities.

Architectural designs to accommodate physical disability have emerged our of a need to better serve a broader population who have a range of physical limitations. In David Gissen’s book, The Architecture of Disability, he

compares two examples of architecture, specifically from a physical disability perspective and explains why one is successful in accommodating physical disability rather than the other. In making the comparison, he questions if the values of accommodating physical disabilities also be used to accommodate learning disabilities in an architectural context.

Being Clear - The Architecture of Disability

Figure 10: Ramp - Ed Roberts Campus, Leddy Maytum and Stacy Architects (Griffith 2011)

In *The Architecture of Disability*, Gissen uses his own experiences and the collection of disability literature and practices in architecture as a lens to analyze previous examples of architecture. This perspective provides the reader with ideas around critiquing architecture to accommodate the impaired.

In “Chapter 4, A Form of Impairment - Empathy and Disfigurement in Architectural Aesthetics”, Gissen dissects the intersection between the architectural definition of form and disability. Specifically, he states, “In architectural theory and the history of architecture, “form” typically refers to the visual essence and physical shape of a work of architecture” (Gissen 2023, 73). However, when it comes to architectural form and disability, Gissen suggests that when a building’s form becomes alienating to disabled people, it is inaccessible (Gissen 2023, 73).

Frigure 11: The Vessel by Thomas Heatherwick (ArchDaily 2019)

Gissen compares Thomas Heatherwick’s sculptural structure, the Vessel (an example of inaccessible architecture), with the ramp of the Ed Roberts Campus by Leddy Maytum Stacy Architects (an example of accessible architecture). The vessel is inaccessible and alienating because the Vessel’s (Figure 11) cascading and monumental eight-story staircase represents the public of New York City as able-

bodied and because disabled people cannot easily acquire direct physical experience of its form. He also notes that the vessel is a physical challenge for anyone (Gissen 2023, 74). In contrast, the orange-red spiralling ramp of the Ed Roberts Campus suggests that the form has self-evident qualities and relationships to impaired people through its usability (Figure 10). In both examples, the criticism (the Vessel) and the praise (the Ed Roberts Campus) suggest that from has self-evident qualities and relationships of impaired people through its useability (Gissen 2023, 74).

Through this comparison, Gissen suggests that if a building does not have an obvious use for the impaired, it is not accessible. If it does, then it is accessible.

In other words, the accessibility features of a building need to be obvious and intuitive to a wide range of disabilities and the non-impaired. If being obvious and intuitive are values of successful accessibility in architecture (shown previously in accommodating physical disabilities), the same values should be applied when critiquing and creating architecture for LDs.

Role of the Environment - The Architecture of Disability

When the term “environment” is used in an architectural setting, it could be seen as the condition within, outside and surrounding a space. As Gissen puts it, “the term environment generally refers to the immaterial elements within and outside buildings and their surroundings (Gissen 2023, 95).

For example, an environment can be built in alignment with a site’s geological conditions and climate. It can even align with the physiology and health of the human being (Gissen.

2023. 95). But generally, the actual design of environments has often aligned with the aspects of human experience and perception with the programmatic needs in literal and uniform ways (Gissen 2023. 96).

However, the idea of the environment has been at odds with more critical and contemporary interpretations of disability, as Gissen states in “Chapter 5: Disabling Environments” (Gissen 2023. 96). This is due to architects (when designing for physiology) who often shape and control such environments, strictly classifying and defining parameters of physiological normalcy and deviance (Gissen 2023. 96). When architects shape environments, they are inserting a deterministic and mechanistic understanding of human physiology within built space (Gissen 2023. 96). Perhaps this way of defining any environment suggests that there is little to critique or improve upon. Consider an environment that is designed with outdated information on climate change without taking into account any new facts on rising temperatures. In this case, it suggests that the interpretation of designing an environment for climate change s has reached a peak and there is very little to build on. Ultimately, this is not true, and opportunities to go back and analyze what could have been improved upon are always available.

If this approach of designing an environment to accommodate the impaired is taken, then it assumes there is no need to consult with around their needs and values or that there is nothing “new” on the subject to consider.

Simply put, the “environment” should reflect the values and needs of the target audience and conditions through consultation. If there are to be better-designed environments for the impaired, specifically those with LDs, their experience

and interpretations of environments need to be taken into account.

The Importance of Consultation

David Gissen expressed that examples of addressing disability in architecture are growing and ever-improving, and the perspective of the impaired is being taken into account. By consulting the impaired, the more effective the spaces will be and the “environment” will set a new bar, encouraging more developments for architectural design for accessibility.

But there continues to be a misuse of the terms disability and accessibility. As previously noted, the definitions of disability and accessibility continue to be best understood as relating to physicality. Focusing only on physical aspects of disability minimizes the idea of consulting the LD-impaired or creating space for consultation around accessibility design.

The report titled Cognitive Impairment, access and the built environment (written in 2004) shows results from a consultation with 130 architects on what they believe should take priority for accessibility in architecture and the built environment (Tuckett, Marchant, and Jones 2004).

The consultation/survey results show the following - next page (Figures 12 - 14).

Much of the results shown in Figures 12-14 have a high percentage on elements and tools for physical impairments. For example, the results for “Always” for physical/mobility was 80% for the 130 architects surveyed (Figure 12). At the same time, the highest percentage for learning difficulties was 32% in the “rarely” category.

	Always (%)	Sometimes (%)	Rarely (%)	Never (%)
Vision impaired	44 (21)	86 (42)	44 (21)	14 (7)
Hard of hearing	25 (12)	71 (34)	58 (28)	29 (14)
Physical / mobility impaired	166 (80)	26 (13)	3 (1)	0 (0)
Learning difficulties	17 (8)	44 (21)	67 (32)	58 (28)

Figure 12: Results of different types of disability that architects take into account when designing a building (Tuckett, Marchant, and Jones. 2004, 9)

	Always (%)	Sometimes (%)	Rarely (%)	Never (%)
Colour contrasts	32 (15)	79 (38)	45 (22)	23 (12)
Accessible toilets	174 (84)	18 (9)	0 (0)	0 (0)
Induction loops	15 (7)	67 (32)	51 (25)	37 (18)
Tactile paving	39 (19)	91 (44)	30 (14)	18 (9)
Ramps	128 (62)	59 (29)	2 (1)	0 (0)
Lifts to all levels	89 (43)	78 (38)	15 (7)	2 (1)
Lighting	88 (43)	48 (23)	30 (14)	18 (9)
One entry point	48 (23)	81 (39)	22 (11)	10 (5)
Level entry / access	128 (62)	57 (28)	2 (1)	0 (0)

Figure 13: Results of consultation with architects about accessible design features taken into account when planning a project (Tuckett, Marchant, and Jones 2004, 8)

Access groups	76
Vision impaired	23
Hard of hearing	18
Physical / mobility impaired	69
Learning difficulties	14
Other	42

Figure 14: Results of consultation with 130 architects about groups consulted at the inception of a project (Tuckett, Marchant, and Jones 2004, 9)

The paper expresses that this lack of knowledge for LDs shown from the survey results also shows there is a lack of accessibility laws, texts and information in the architecture field. Specifically, the authors of the paper state they were surprised at how little research and formal guidelines and principles there are about making the environment accessible to people whose primary impairment is cognition, explained in section 2, “The Context” (Tuckett, Marchant, and Jones 2004, 6).

Tuckett, Marchant and Jones state that the document titled Penton 1999, which is a document of critical principles and advice on accessible design for the UK, does not mention the needs of people with learning disabilities anywhere in the document (Tuckett, Marchant, and Jones 2004, 7).

Penton 1999 states that particular text around physical and sensory accessibility guidelines could have some potential similarity to cognitive impairments. For example, Penton 1999, “Fluorescent lighting creates a magnetic field which can cause a hum in hearing aids and should be positioned to avoid interference.” However, there is no mention of possible consequences for people with autism or epilepsy (Tuckett, Marchant, and Jones. 2004, 7).

Takeaways

> I believe we, as disabled people, should find a way to bring our particular perspectives into the architectural design of the environment. This involves bringing the physiological experiences of disabled people to the attention of designers within public forums, as well as thinking about how we might ensure that our perspectives become part of the education of future architects, planners, and designers (Gissen 2023, 109).

Disability and Architecture is a pressing social issue. In order for the campus to include and welcome those with LDs, there are three main considerations:

- The design should be recognizable, inclusive, welcoming, and self-explanatory.
- There needs to be spaces to offer consultation and services for everyone on campus including the LD impaired.
- The design should encourage more awareness, education and research around LDs and cognitive impairment in architecture.

Chapter 4: The Campus Pattern

The Organization of the University

The university is an organization of buildings and programs for higher education and learning. Physically, the university needs to be able to house and respond to the needs of the academic world and new branches of knowledge and study. It is also supposed to bring together learners to collaborate, share ideas and create a sense of community. In *Arthur Erickson on Learning Systems*, Erickson describes the university as an organism. It differs in organization, purpose, and method from place to place, and its physical form is a direct outcome of its educational point of view and its needs (Erickson 1968, 45). Erickson also emphasizes that the placement of buildings in a university should not be interpreted for aesthetic reasons. Instead, a university is a particular organization of space tailored to a precise concept of education (Erickson 1968, 45). As such, universities encompass buildings dedicated to specific streams of study, educational tools and resources (such as a library or a laboratory) and services to help aid and guide the educational experience of all attending students, staff and instructors.

Universities have attempted to include Accessibility services for LDs on campus. For example, on Dalhousie University's Studley Campus (Figure 15) there is the Dalhousie University Student Accessibility Centre (Dalhousie University 2023a). The Dalhousie University Accessibility Office helps support students with their educational experience based on their accessibility needs (physical or learning). For example, the office can help set up an accommodation

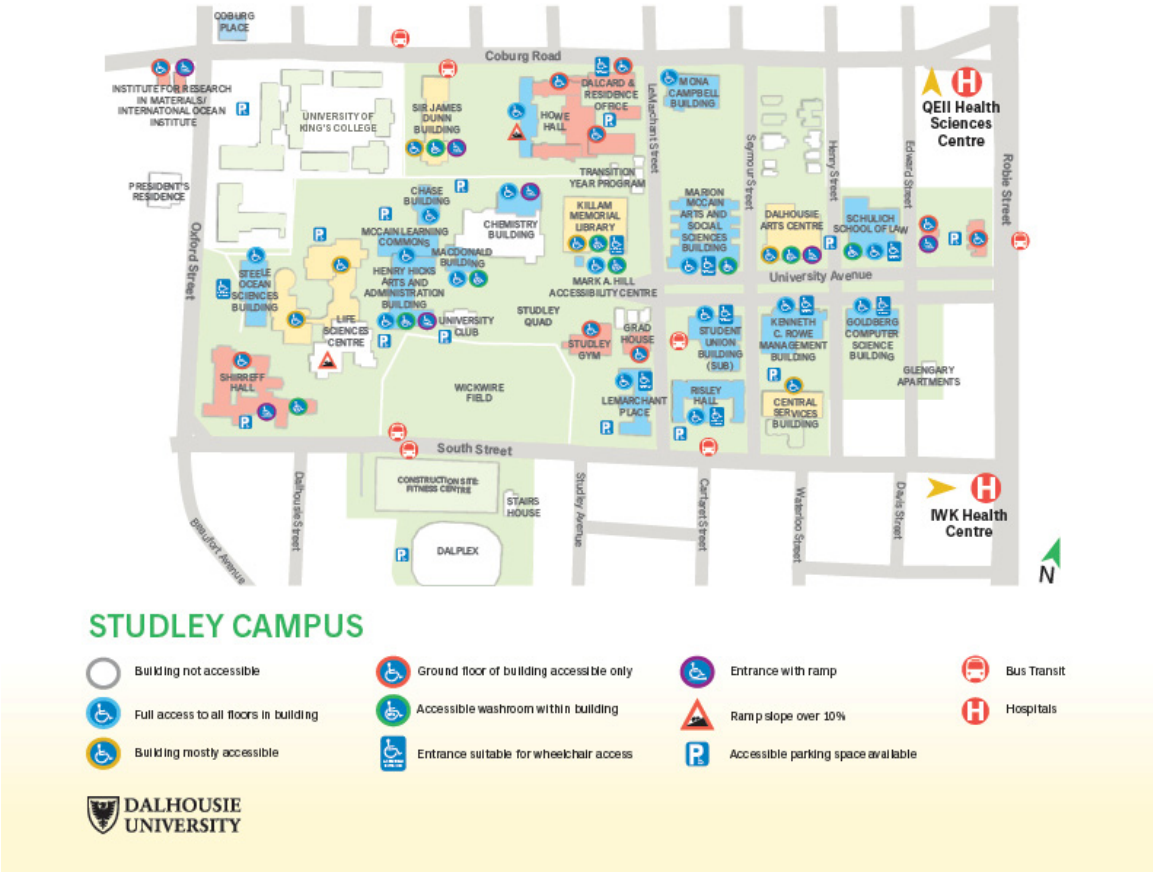


Figure 15: Map of Studley Campus - accessibility office located at the Killam Library (Dalhousie University 2023a)

Figure 16: Mark A. Hill Accessibility Centre - outside the Killam Library (Dalhousie University 2023c)

plan or arrange a private room (Figure 16) for taking exams in a building such as the Mark A. Hill Accessibility Centre (Dalhousie University 2023c).

To many, having a diagnosed disability may seem “rare” and somewhat “exclusive”. As a result, spaces for Accessibility/ LD services may be purposely separated from the wider accessed educational buildings on campus. For example, in Figure 14, the Mark A. Hill Accessibility Centre is not attached to other campus buildings, hallways or specific programs. It is not even physically attached to the Killam Library (Figure 17), which is seen as a heavily accessed and wayfinding building on campus. As an observation, this spatial separation does seem to promote exclusion more than inclusion. Spaces such as the Mark A. Hill Accessibility Centre within a broader, more inclusive and welcoming space on a campus. Accessibility services and specifically accommodations, are not just for LDs – they have the potential to benefit everyone.

Erickson described the university as a purposeful and well-thought-out series of spaces and buildings to cater to educational needs. He also noted that the architectural pattern which used this intention had been somewhat misinterpreted as the idea of the university evolved (Erickson 1968, 45-47). This raises a question: Are current ideas and patterns of university structures and designs responsible for the intentional separation and exclusion of Accessibility Services spaces?

Figure 17: The Killam Library (CBC 2015)

Evolution of the Campus Pattern

The university has taken many forms, some began not as a collection of buildings, but as a religious centre or a courtyard. Generally, the first form of the university was a space for gathering and knowledge sharing. Arthur Erickson stated in Arthur Erickson on Learning Systems, the first physical university may be the 9th century Al-Azhar in Cairo, which was the central space for Islamic teaching (Erickson 2022, 45). The Al-Azhar was described as a courtyard (Figure 20) in which students, scholars, merchants, and beggars, gathered in groups seated on carpeted floors, inviting opportunities for anyone to either stop and rest or share in discussions about medicine, law, the Koran (Erickson 2022, 45). The Al-Azhar (Figure 18) features an enclosed space focused learning and to encourage an environment of knowledge sharing, gathering and relaxation. This thesis is concerned with Sexton Campus, which is located in Halifax, Nova Scotia, Canada. If there are specific influences on the design of this particular campus, it is likely from patterns of campus design passed down from English colleges (Erickson 2022, 46) when the English were present in

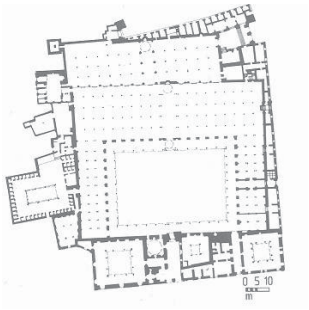


Figure 18: General plan of the Al-Azhar (FSTC 2004)

Figure 19: View of the Al-Azhar (Mayer 2008)

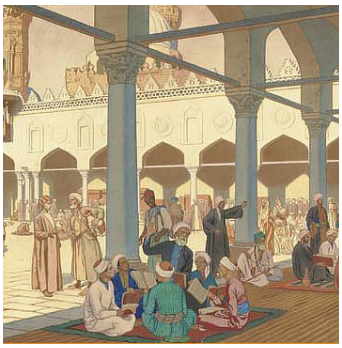


Figure 20: Activity in the Al-Azhar courtyard (Bilibin 1900)

early America. In an English College, the English pattern, derivative of the medieval monastery pattern, consisted of buildings arranged around a mingling space in the shape of a quadrangle and the monastic cloister (Erickson 1968, 46).

As statedAgain, since the thesis is on Sexton Campus (Halifax, Nova Scotia, Canada), the specific influences on the campus' design would be from architectural patterns and forms from English college design when the English were present in early America (Erickson 2022, 46). Also described in *Arthur Erickson on Learning Systems*, the first examples of the English college layout (Figure 21) are derivatives of the medieval monastery pattern, which consisted of buildings arranged around a mingling space in the shape of a quadrangle or the monastic cloister (Erickson 2022, 46).

As stated earlier, the university has taken many forms – from a religious centre or courtyard to a collection of dedicated buildings.. Regardless of its form, it is a universal space for gathering and knowledge exchange.

As described in *Arthur Erickson on Learning Systems*, the first examples of the English college layout (Figure 21) are derivatives of the medieval monastery pattern, which consisted of buildings arranged around a mingling space in the shape of a quadrangle or the monastic cloister (Erickson 2022, 46). Following the discipline of the day, there was a mixture of instruction with worship, sports activities, and social contact in the quadrangle (Erickson 2022, 46). The buildings surrounding the quadrangle (Figure 22) consisted of residences, a dining hall and a chapel which were continuous structures around the quadrangle. In other words, everything was connected (Erickson 2022, 46).

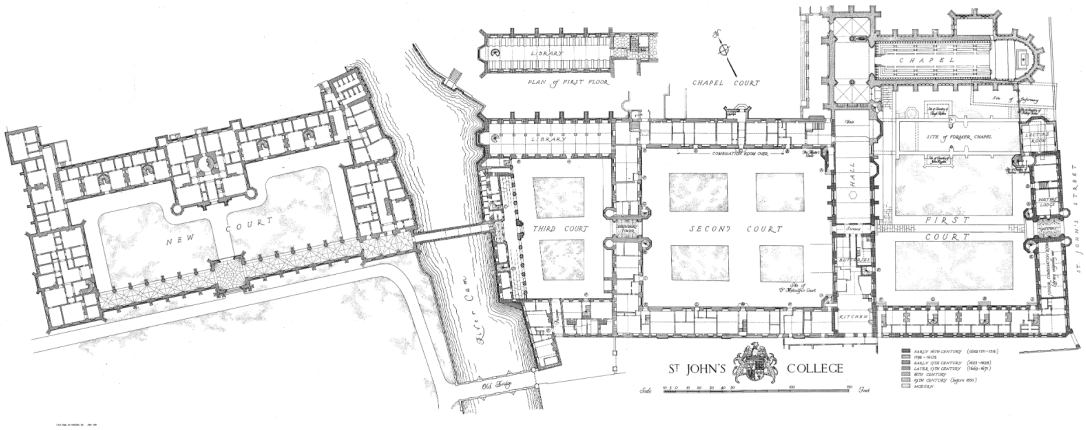


Figure 21 - St. John's College plan (BHO 2023)

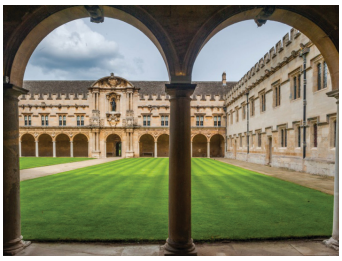


Figure 22: Photograph of the Catebury Quad, St. John's College (Britain Express, 2023)

The English pattern kept critical aspects of a university campus in the centre quadrangle (worship, social interaction) while other programmed buildings, such as residences and dining halls, were placed around it (Erickson 2022, 46). However, as time passed, and the university became a public institution focused on mass education, the pattern changed and evolved (Erickson 2022, 46). The residence became less focused as the classroom became the most crucial element of the campus (Erickson 2022, 46). This hyper-focus on the classroom could have been the start of the campus pattern moving away from including all programs on campus (the quadrangle being the centre of this) and into a collection of buildings more focused on classrooms and teaching while putting the less critical programs such as residences and places for non-learning activities aside. As more individual disciplines and new branches of study were added, the classrooms became isolated colleges devoted to their respective subject (Erickson 2022, 46). Erickson described the now individual college as a unique and separate school from the more significant spatial idea of the "university" as each college required more space to expand based on their subjects of study (Erickson 2022,

46). Furthermore, the buildings surrounding the quadrangle buildings became either separated or re-programmed, such as the chapel changing into a bell tower and administration building (Erickson 2022, 46). The campus pattern needed as much space as possible due to the rapid additions to education and study. Consequently, the pattern was pushing aside or not focusing on spaces for gathering, collaboration and inclusion.

This pattern shifted to America and shaped the North American campus, which became a prototype in which random and separate buildings, each having little respect architecturally for one another, were placed on a plot of land (Erickson 2022, 47). Moreover, the “North American” pattern has favoured departmental indoctrination over a connected educational campus (Erickson 2022, 47).

A university layout (Figures 23 & 24) which clearly represents the idea of favouring individual departments over a connected university campus is the University of Virginia (Charlottesville, Virgina).

The layout of Sexton Campus also reflects what Erickson describes as the North American campus pattern to be – a cluster of buildings with no apparent visual connection to one another and without a clear centre such as a quadrangle. To further understand the nature of Sexton Campus, a site analysis was conducted.

Looking at Sexton Campus

Through several site visits, site-plan analyses, and other diagram-based exercises, the pattern is quite non-uniform and somewhat random, which may have resulted from several additions since inception. Upon review of the site

plan of Sexton Campus (Figure 25 & 29), several potential quadrangles become apparent; however there are no. clear points of entry or the usual programmatic elements .. For example, there is a quadrangle with the student service centre, the Sexton library, part of the Sexton gym, the IDEA building and the Emera Design Building, but there no clear indications of where one would enter these buildings once in the quad (Figure 29). Additionally, part of this quad has an

Figure 23: University of Virginia aerial view (UVA 2023b)

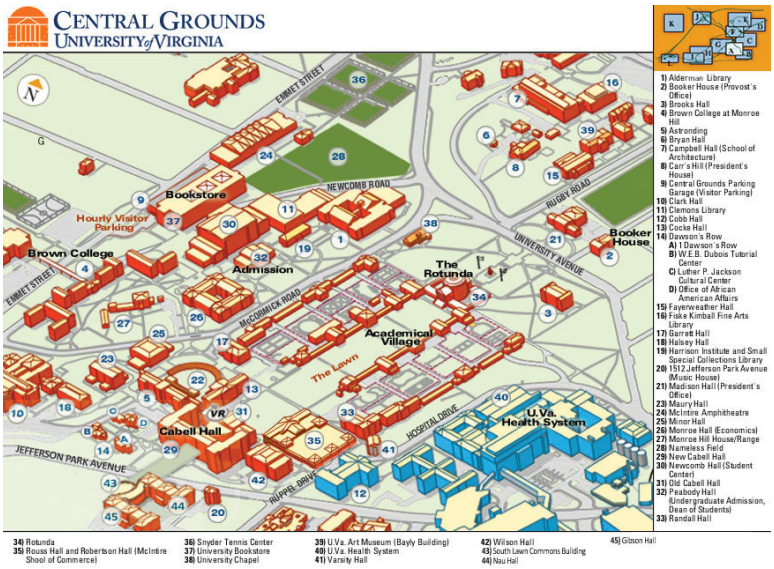


Figure 24: Map of the University of Virginia (UVA 2023a)

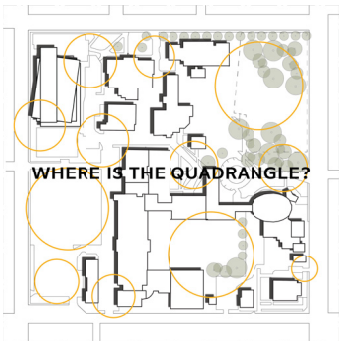


Figure 25: Where is the Quad?

Figure 26: Photograph of potential quad on Sexton Campus

Figure 27: Photograph of potential quad and the slope

Figure 28: Photograph of the intersection of the Civil and Resource Engineering Building and IDEA Building

incredibly steep slope on one side and faces glass facades on all the others, which could demotivate sports activities (Figure 27).

After a circulation analysis (Figure 32) and through general observation, many students, visitors, and staff use the “main” IDEA Building entrance (Figure 33) located just behind the massive parking lot on Sexton Campus (Spot number 5 on Figure 33). This seems to be the heart of the campus, as it has significant pathways leading to threshold points on the four main streets that border the campus - Spring Garden Road, Queen Street, Morris Street, and Barrington Street. This is likely because the IDEA Building holds the largest and most diverse number of services and spaces on campus for students, visitors and staff , such as workshops, prototyping labs, innovation studios, and open or closed workspaces (Dalhousie University 2023b).

However, the space for accessibility services and private exam room accommodation on Sexton Campus is not

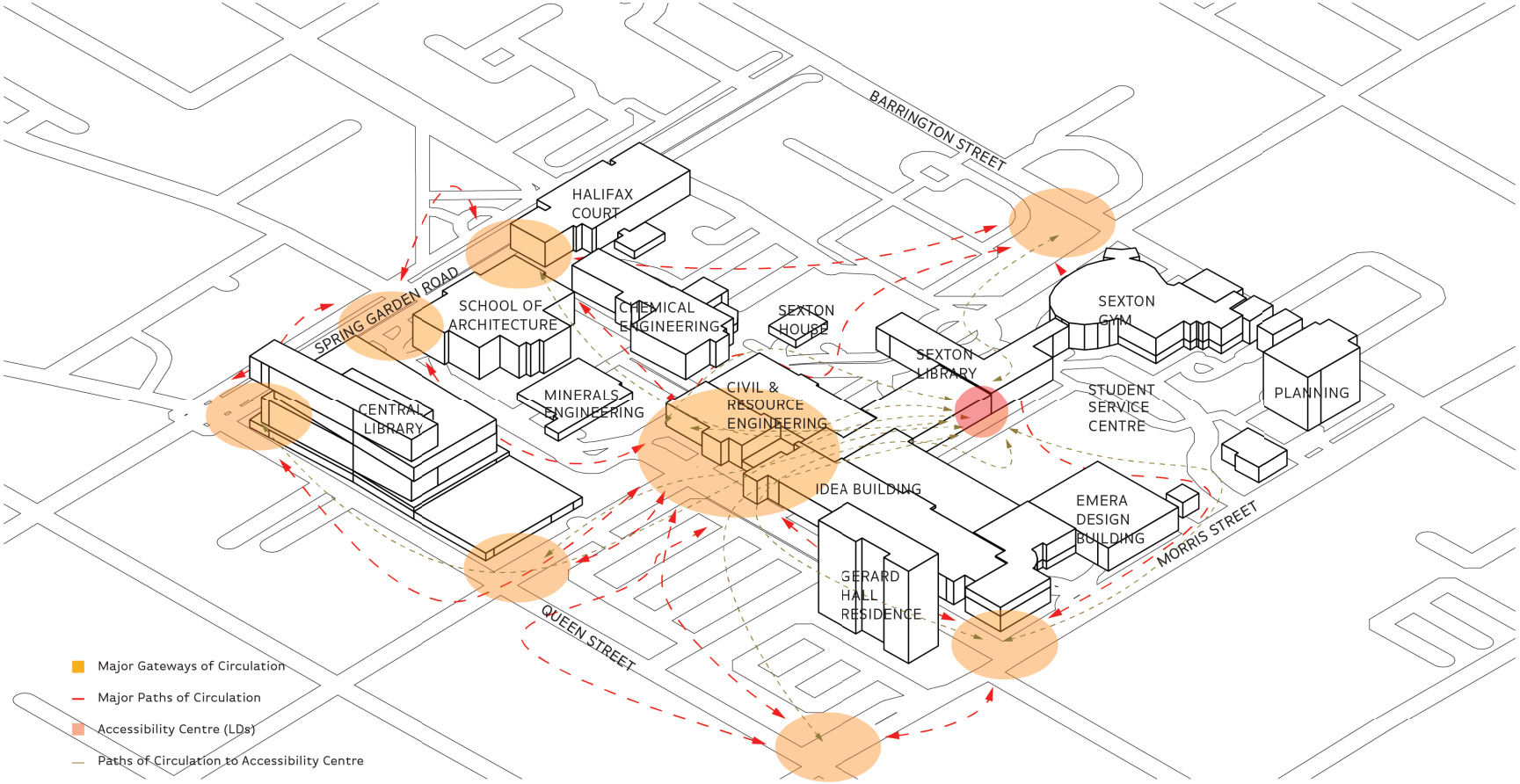


Figure 29: Diagram of the circulation on Sexton Campus

Figure 30: Photograph of main entrance to the IDEA Building

located in the IDEA Building but rather, it is located closer to the Sexton Library (Figure 34). The location of this space was discovered through a site visit and has yet to be identified on any official maps of Sexton Campus provided by Dalhousie University. This space is difficult to find and recognize because the entrance is a solid door with no openings to the outside in order to see the inhabitation within (Figure 1, 31, 32 & 33).

Figure 31: Photograph of entrance to Student Service Centre

Despite an unclear quad or main entrance, the IDEA Building is a heart of circulation on Sexton Campus. The Student Service Centre (Figure 31 & 32) is treated as an exclusive space, and is disconnected from the wider used areas of circulation, community and collaboration. Additionally, it is only one space, not a series of rooms dispersed through the campus (Figure 34). This speaks to Arthur Erickson's statement that the campus pattern (in North America) has favoured individual departments rather than a connected campus (Erickson 2022, 47).

Figure 32: Photograph of the door to Student Service Centre

The Campus and Disability

There is opportunity for Sexton Campus to be better organized and more visually structured. It has not appeared to have followed a specific design layout since it was built. Let's compare the axonometric layout of Sexton Campus, shown in Figure 34, with an axonometric illustration of Trinity College (Cambridge University, Cambridge, England), shown in Figure 33. There are easily identifiable quadrangles along with connected buildings surrounding their respective perimeters. In contrast, it is hard to identify if the "quadrangles" on Sexton Campus are functional quads or just spaces between dispersed campus buildings.

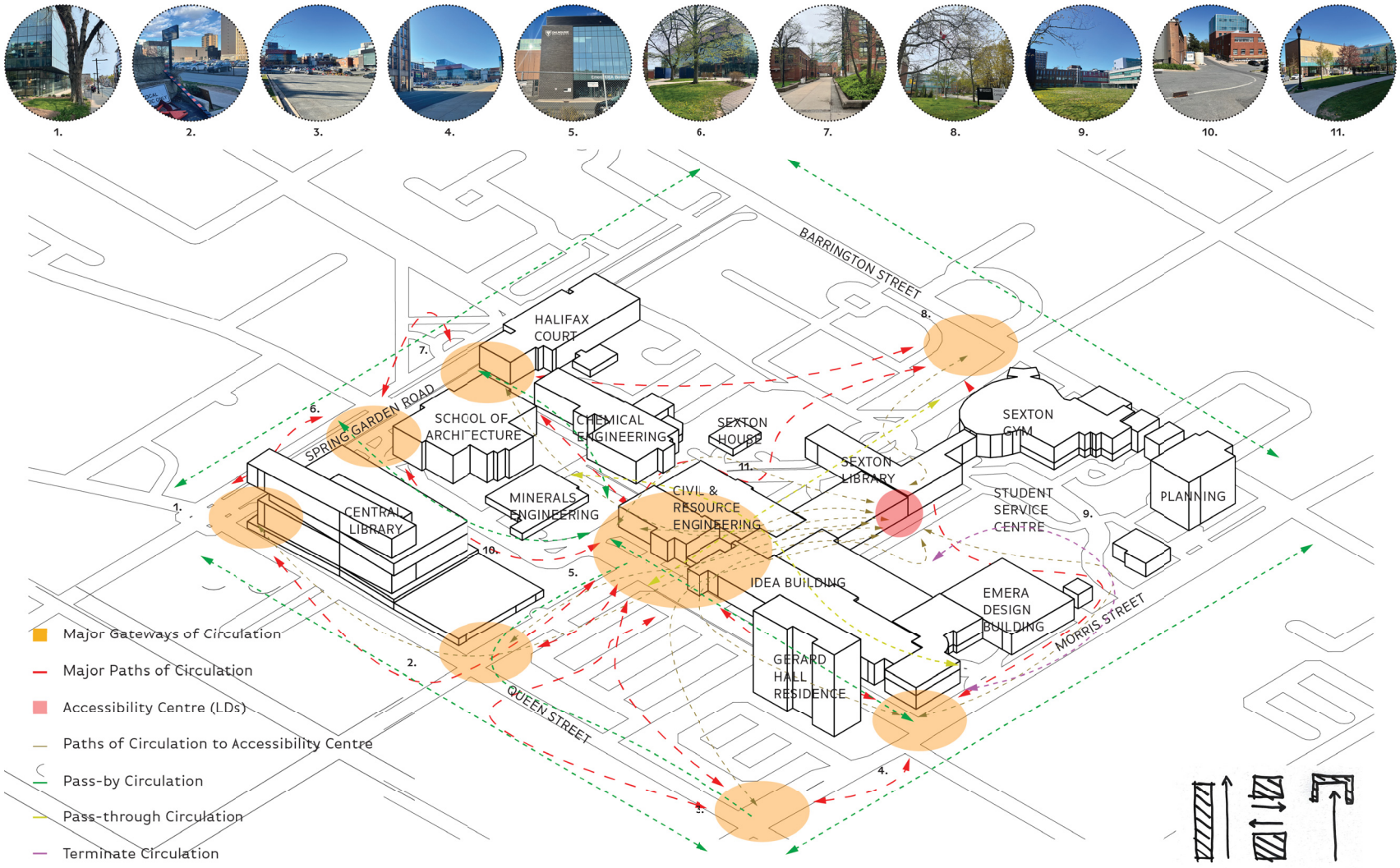


Figure 33: Diagram of the circulation on Sexton Campus

Figure 35: Illustration of Trinity College, Cambridge (Trinity College 2023)

Figure 36: Hallway containing the accessibility centre on Sexton Campus

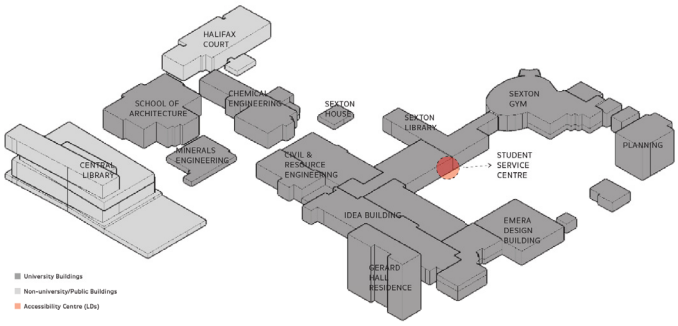


Figure 34: Diagram of Sexton Campus contrasting with student service centre

As noted previously, the IDEA Building serves as the heart of the campus; however, the student service centre (mainly used to house rooms for individual examinations) is not part of this heart, nor is it easily identifiable within the corridor it shares with Sexton Library or from an outside view through a window (Figure 1). Ironically, the Mark A. Hill Accessibility Centre on Studley Campus (Dalhousie University's other Halifax campus) can be identified from the outside, along with a view of the Killam Library (Figure 16).

The Mark A. Hill Accessibility Centre and the Student Service Centre shows that Dalhousie University supports and accommodates disabilities and understands the full definition of "accessibility." There may not have been a thorough review of how to incorporate accessibility services visually or spatially for inclusivity on campus, but these centres still offer spaces for accessibility accommodation.

Gallaudet University

A great example of a university with many, if not all, architectural features and programs designed around disability is Gallaudet University – a university for people

Figure 37: Gallaudet University's new Residence. (Patel 2013)

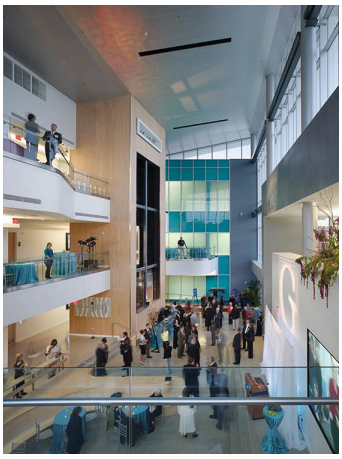


Figure 38: Sorenson Language and Communication at Gallaudet University (McMullan & Associates 2023)

who are deaf or hard of hearing. It is located in Washington, D.C. Similar to the idea of using a disability lens to design given by David Gissen, Gallaudet University worked off the concept of "Deafspace," which is a strategy to identify both the challenges deaf individuals face, as well as how they adapt to challenging situations by altering their way of life (Gallaudet University 2022). Examples of how people who are deaf or hard of hearing navigate spaces are described as:

> When the deaf get together, they often work together to rearrange the furniture into a "conversation circle" to allow clear sightlines so everyone can participate in the visual conversation. Gatherings usually start with participants adjusting window shades, lighting, and seating to optimize conditions for visual communication that minimize eye strain. (Gallaudet University 2022)

> Deaf homeowners often cut new openings in walls, place mirrors and lights in strategic locations to extend their sensory awareness and maintain a visual connection between family members. (Gallaudet University 2022)

As shown in Figure 39, various techniques and diagrams were developed from the idea of deaf space, focusing on space and proximity, mobility, light, colour and acoustics (Gallaudet University 2022). Overall, the Deafspace strategy has allowed the university to pinpoint methods that not only make communication and wayfinding simpler for people who are deaf or hard of hearing, but also produce spaces that function more effectively and comfortably for everyone (Lynch 2016). Deafspace emerged out of a concern to make spaces better for people who are deaf or hard of hearing, but the end result made it more inclusive for everyone on campus.

An Opportunity to Reinvent Sexton Campus

Sexton Campus supports LDs, but that support is not included in the broader campus in terms of circulation and

spatial organization, and no one easily recognizes it. Here is a summary of the main takeaways of the previous chapters:

- Chapter 2 explains the challenges various LD conditions create and how we can support individuals with an LD,
- Chapter 3 explains that previous successful disability architecture starts with consultation during the design phase with groups or individuals who are impaired and ultimately has an easily identifiable function

Consider that these takeaways are applied to the issues addressed on Sexton Campus – i.e. its organization and lack of inclusivity for accessibility. There is an opportunity to redefine the campus through an intervention. However, if the support for LDs is part of this more extensive idea of inclusivity on campus, the range of services and tools offered by the Dalhousie Accessibility Office must be fully understood.

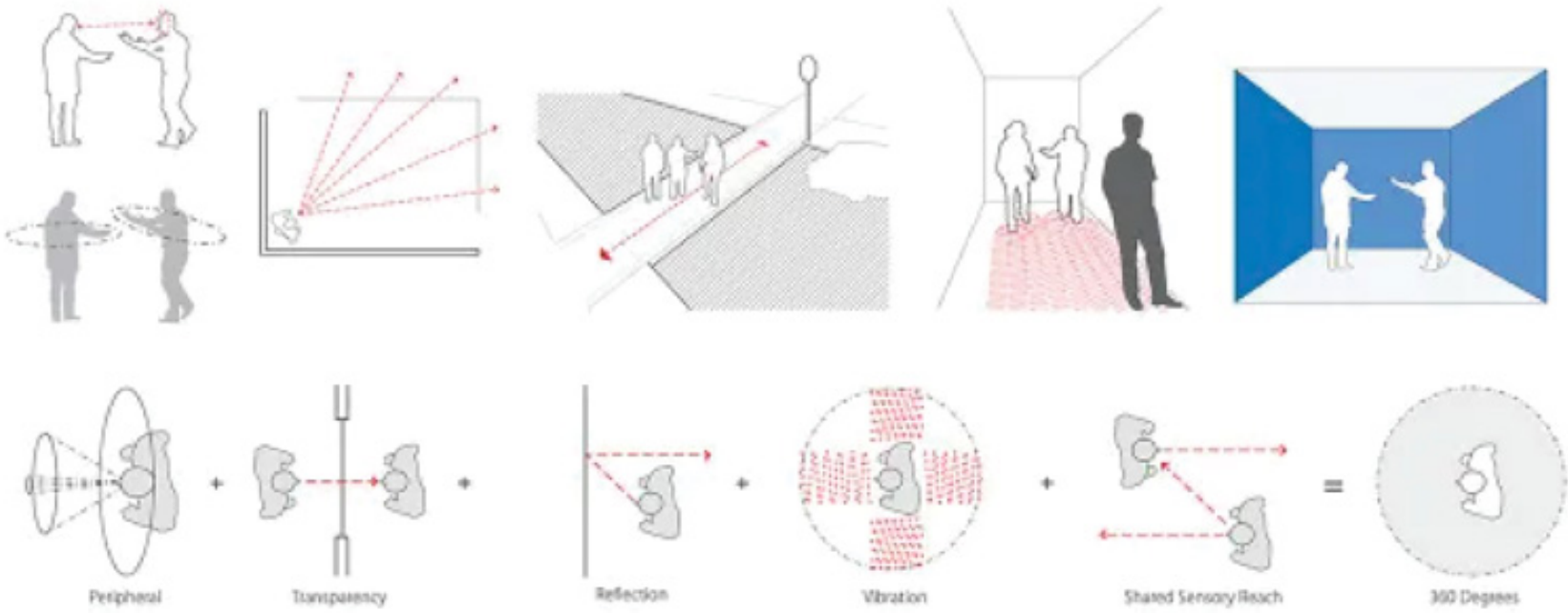


Figure 39: Deaf Space Design Strategies for Gallaudet University (Dangermond Keane Architecture & ggwash 2015)

Chapter 5: The Role of the Accessibility Office

Dalhousie's Accessibility Services

Figure 40: Killam Library on Studley Campus (Dalhousie 2023)

At Dalhousie University, the Student Accessibility Centre offers student expertise and support on access, inclusion, and accommodation. The centre (the main office located on Dalhousie's Studley Campus in the Killam Library) works closely with Dalhousie students, faculty and staff to create an inclusive educational environment for students (Dalhousie University 2022a). Listed on the - Academic Support - Accessibility web page on Dal.ca, the centre supports students by:

- facilitating access to academic courses and programs, facilities, services, and activities
- identifying classroom, exam and other accommodations that reduce barriers to learning
- advocating on behalf of, and alongside you to ensure reasonable accommodations are available and implemented.
- assisting with accessibility funding for disabilities
- connecting you with on and off campus resources to enhance your success (Dalhousie University 2022a).

There are four main areas the Student Accessibility Centre give support and advice on:

- 1. Accommodations for all types of disability
- 2. Exam arrangements
- 3. Access to Assistive Technology
- 4. Services for Faculty and Staff

The Definition of Accommodation - Dalhousie University

> An accommodation reduces or removes barriers to ensure fair and equitable access to classroom, testing, co-op/fieldwork environments, and extra-curriculars. Formal accommodations are managed by the Student Accessibility Centre (Halifax)

> and the Student Success Centre (Truro). An accommodation is introduced when a protected characteristic (as defined by provincial human rights legislation) may place you at a disadvantage compared to other students who are not affected by a protected characteristic: e.g. (dis)ability. Having an accommodation does not provide an unfair advantage over other students as students with accommodations are still expected to demonstrate they've met the learning outcomes set for the course. (Dalhousie University 2022a)

Types of Accommodations

Below is a list of standard accommodations Dalhousie offers, but more can be provided based on individuals condition (Dalhousie University 2022b):

- Accessible parking
- Alternate formatting
- Alternative testing conditions
- ASL interpreting/FM system/CART
- Class recordings
- Cue sheets
- Deferred exams/deadline extensions
- Emotional Support Animals
- Modified presentations
- Note-taking
- Prioritized room selection in on-campus residences
- Residence accommodations

These accommodations are in place to reduce the effect of learning barriers on campus. As in Gallaudet University's concept of DeafSpace, an approach can be made towards accommodating LDs which can alter or modify a space to better suit accessibility needs.

Interview with the Dalhousie Accessibility Office

To link this thesis to the Dalhousie community, a major goal was to understand the workings and role of the Dalhousie Accessibility Office.

Early in 2023, I had the pleasure of interviewing Jen Davis, manager at the Accessibility Office at Dalhousie University on the topic of LDs and Accessibility. This interview was an opportunity to learn more about the stigma surrounding LDs, accessibility on a campus, and what some of the common and frequent challenges LD diagnosed students face (Davis 2023).

> Q1: What percentage of students enrolled at Dalhousie have a diagnosed LD and an accessibility plan? How does this break down for undergraduate and post-graduate?
>
> Response: We are unable to provide an answer to this question – we do not keep this level of detailed statistics (i.e., having a learning disability versus needing accommodations because of another protected characteristic) (Davis 2023).
>
> Q2: In your professional opinion and experience, what are the greatest challenges students with LDs face?
>
> Response: There are a variety of learning disabilities, therefore people may experience learning disabilities differently as well as any associated challenges. In our opinion there is not “one” greatest challenge as the challenges will vary depending on personal experience (Davis 2023).
>
> Q3: Generally speaking, LDs are invisible. What challenges do you think this poses for those who are accountable for creating a positive and optimal learning environment – e.g. advisors, professors/instructors .
>
> Response: Visible disabilities make the need for certain type of accessibility support more obvious. People with invisible disabilities may not have their needs considered because focus often tends to be directed to students with a visible disability. All instructors are responsible for creating a positive and optimal learning environment and EDIA (Equity, Diversity, Inclusion and Accessibility) should be considered in course development across the board (Davis 2023).
>
> Q4: In an academic context, what are the crucial components that need to be considered and/or implemented to ensure students with LDs meet their full potential?
>
> Response: Universal Design for Learning (UDL) is an excellent way to help all students as instructors can incorporate support for students with LD or other accessibility needs. UDL is helpful for supporting all students, regardless of disability. For example, a student whose first language is not English, a student who’s a single parent with young children, etc. Ensuring that accessibility is built into programs is helpful, but students can always connect with the Student Accessibility Centre if they find they need additional support outside of

what UDL provides (Davis 2023).

Q5: I am comfortable disclosing this – I identify with a learning disability. From previous academic experience, I have been on the receiving end of comments such as, “I don’t understand how you can’t solve this simple problem” or, “You just need to work harder”, or “You clearly don’t get it.” My sense is that these comments are born out of frustration – on both sides. What are the ways an academic institution can improve the way students and faculty communicate?

Response: It’s discouraging to know that students have experiences with faculty which don’t foster a supportive and collegial environment. We hope that students can feel empowered to have open conversations with faculty which are both friendly and respectful (Davis 2023).

Q6: At Dalhousie, is it mandatory for all instructors learn about LDs and Accessibility? For example, are there frequent opportunities to learn more about how to approach accessibility and how to support LD students in reaching their full potential?

Response: We are not aware if this is currently mandatory, but there is new staff/faulty onboarding which encourages a focus on UDL as well as Culturally Responsive Pedagogy (CRP). During these sessions accessibility is discussed at length. These trainings tend to be well attended and are more prevalent on campus than ever before. There is also more opportunity for faculty to attend additional training and to make positive and informative connections with the Centre for Learning and Teaching (CLT). Additionally, the SAC regularly connects with faculties to discuss issues of accessibility as well as the new accessibility plan. This is exciting as we’ll be seeing developments in the Built Environment, Teaching, Learning, and Research, Goods and Services, Information and Communication, Transportation and Employment (Davis 2023).

Q7: Articles I have read suggest that students with an LD have trouble accessing their accessibility plan and other services and resources such as counselling, books on strategies, etc. Is this a pressing issue? Are there other significant issues facing accessibility today?

Response: We always want to ensure students can access our services and other supports. We are not aware that students are having trouble accessing their accessibility plan and wouldn’t know this is the case unless a student brought it to our attention. We are aware, that there are challenges with accessing access mental health services, but there are supports like same day counselling to ensure students receive the urgent care they may need (Davis 2023).

Q8: How can we promote more inclusive learning in a campus environment?

> Response: Accessibility and inclusivity is everyone's responsibility. It is up to the entire Dalhousie community to ensure the learning environment is inclusive. The Dalhousie University Accessibility Advisory Committee (DUAAC) members serve as champions and provide high-level direction, recommendations and resources for the development of the Dalhousie University Accessibility Plan. One of the key focus areas is Teaching, Learning and Research. Our commitment as an institution: Dalhousie University is a leader in inclusive and accessible teaching and learning, and collaborative research on accessibility. Recommendations 2.1 – 2.8 are intended to help this commitment become our reality (Davis 2023).
>
> Q9: This is a blue-sky question - What physical architectural change would you make to improve the ease of accessing learning support?
>
> Response: Ideally, it would be wonderful to see all student supports/services centrally located in one building. This would create ease of access because of proximity. Students may be more inclined to engage in services and attend appointments if they didn't have to travel to various buildings across campus for appointments with different offices and advisors (Davis 2023).

Post-interview Observations and Reflections

It is clear the Accessibility Office has a crucial role in ensuring that individuals with LDs and other accessibility needs feel welcomed on campus and included in the Dalhousie University community. But it is also clear that proper placement and key architectural features will enhance the office's ability to deliver its services. Instead of approaching accessibility offices and spaces as separate or "leftover" areas on campus, such as Figure 1, the offices should exist in structures that are widely accessible and commonly used by the broader university community and the public. Additionally, accessibility services could go beyond helping students with accessibility plans or LDs. They can help faculty members create a more inclusive learning environment for certain courses, or like Jen Davis mentioned, integrate UDL (Universal Design Language) services or even training into these learning environments.

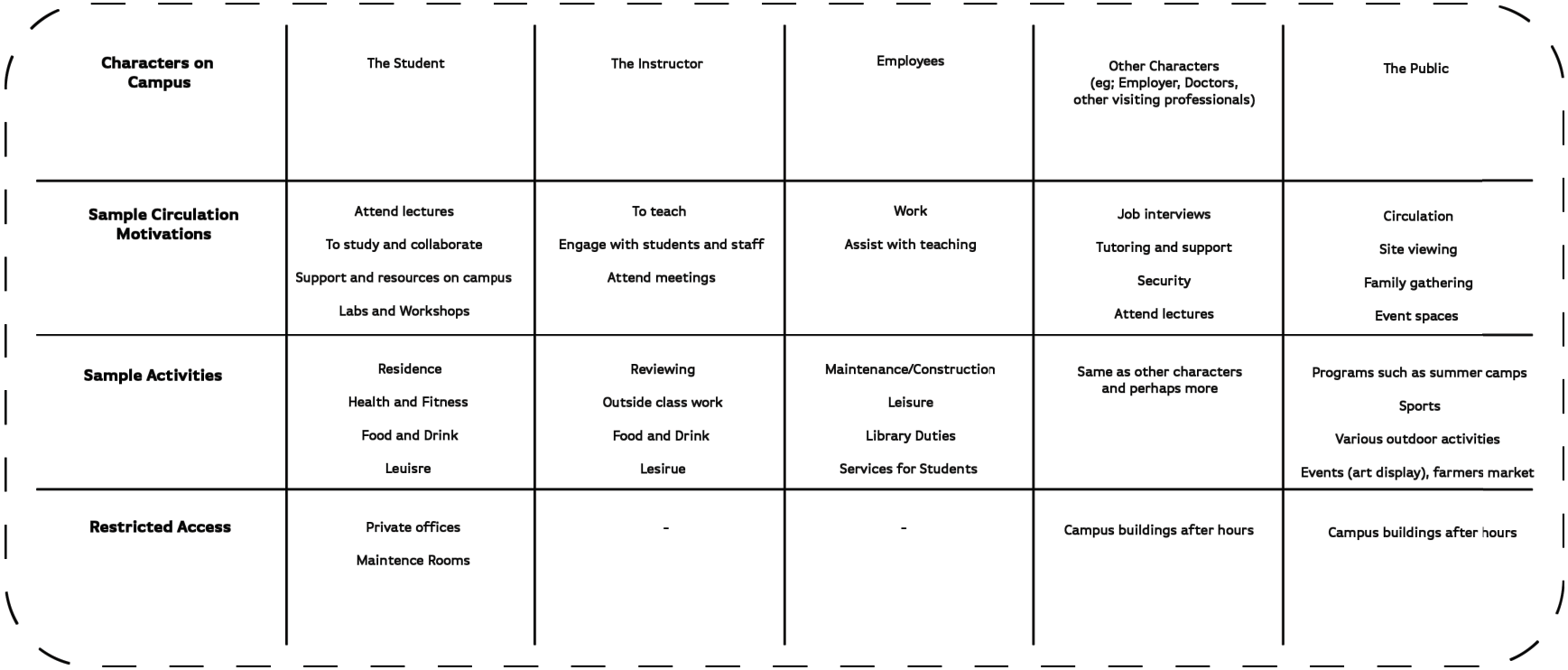
Figure 41: View of one of the Accessibility Offices in the Welcome and Accessibility Centre intervention

Chapter 6: The Strategy

Inhabited Circulation and Proposed Interventions

Concerning the thesis, the word circulation is defined by how people move in and out of a space, or by how they get from one place to another. The word, inhabitation, refers to how people occupy and use a space. The combined term, Inhabited Circulation, is about how people move through and along occupied or programmed spaces. Inhabited Circulation is how the thesis can support and include individuals with LDs on campus, and also define the campus as a necessary space within the urban fabric of Halifax. Inhabited Circulation is the design strategy for the thesis consisting of three scales. The first and the broadest, is the scale of the city, the second is the scale of the campus, and the final and most particular is the scale of the individual.

To develop the scales of the city, the campus, and the individual in-depth, a character matrix was created to help analyze what kinds of activities and precisely what kind of inhabitation along circulation (then making Inhabited Circulation), would occur along these three scales. In Figure 42, there are two main characters: the Student and the Public. Figure 42 also shows several other characters who share attributes of both the student and the public – e.g. an instructor, a family, and a job recruiter. The list of characters is theoretically endless. The matrix helps remind us that the scales serve inhabited circulation for multiple characters, not just one.



Characters on Campus	The Student	The Instructor	Employees	Other Characters (eg; Employer, Doctors, other visiting professionals)	The Public
Sample Circulation Motivations	Attend lectures To study and collaborate Support and resources on campus Labs and Workshops	To teach Engage with students and staff Attend meetings	Work Assist with teaching	Job interviews Tutoring and support Security Attend lectures	Circulation Site viewing Family gathering Event spaces
Sample Activities	Residence Health and Fitness Food and Drink Leuisre	Reviewing Outside class work Food and Drink Lesirue	Maintenance/Construction Leisure Library Duties Services for Students	Same as other characters and perhaps more	Programs such as summer camps Sports Various outdoor activities Events (art display), farmers market
Restricted Access	Private offices Maintence Rooms	-	-	Campus buildings after hours	Campus buildings after hours

Figure 42: Characters on campus

The thesis aims to reinvent the campus by implementing design interventions using Inhabited Circulation. There are three design interventions that need to be tested on Sexton Campus. The three interventions are 1. An urban park replacing the current parking lot on Sexton Campus. 2. A series of circulatory bridges on campus. 3. A new Welcome and Accessibility Centre.

The strategy for reinventing the campus is as follows:

- 1. Analysis and development of each scale - the city, the campus and the individual.
- 2. Assigning a scale of inhabited circulation to each design intervention.
- 3. Demonstration of the three interventions using inhabited circulation in the form of a master plan.

Scale of the City

The design interventions should be informed by the inhabited circulation of the surrounding urban fabric and not just by the inhabited circulation within the campus (Figure 43). Several site visits and overlays of the campus and the city were conducted as an axonometric site plan to determine major intersections and pathways of circulation and significant districts/areas of public use space (Figure 44). The conclusion was that Sexton Campus is surrounded on all four sides by a sizeable public use space, and that the circulation outside the campus perimeter follows a fairly uniform grid pattern (Figure 44). Sexton Campus is used by individuals as a shortcut to significant intersections of circulation instead of only travelling along the perimeter of the campus. Overall, the site analysis of Inhabited Circulation at the city scale (Figures 43 & 44) affirms that the campus is used by the university's members as well as the public at

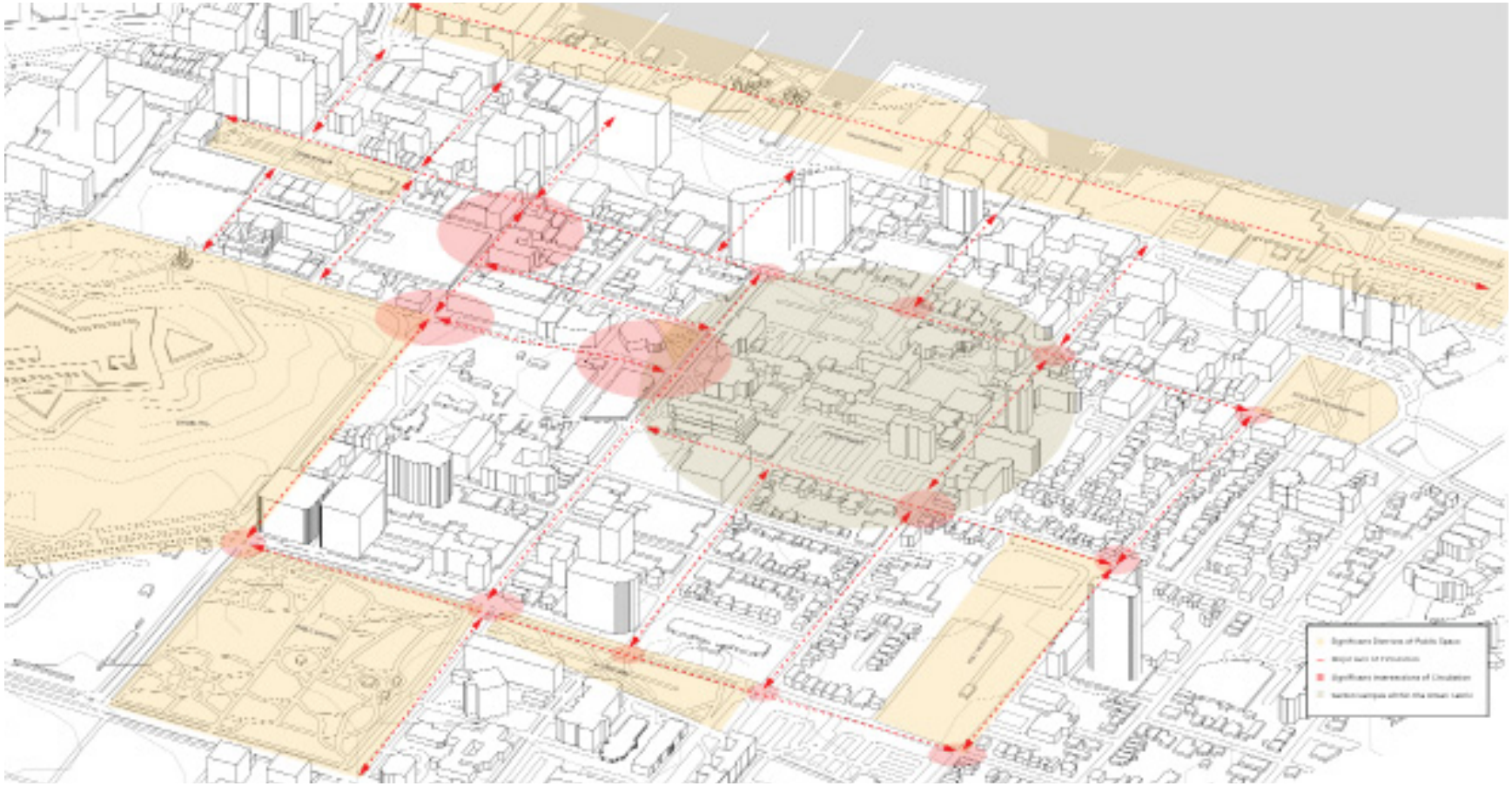


Figure 43: Scale of the City - Circulation Analysis

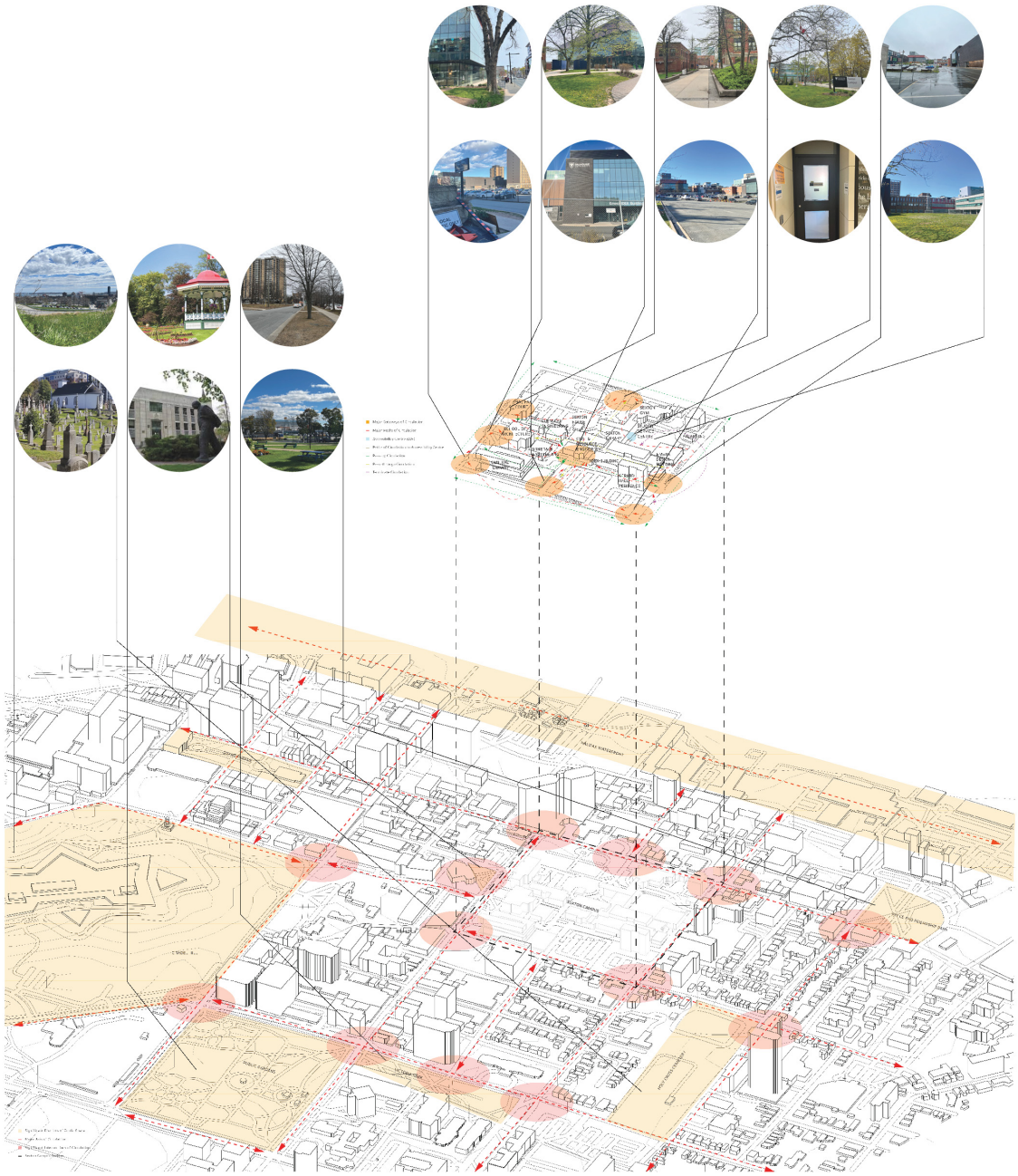


Figure 44: Combining the scale of the city and the campus

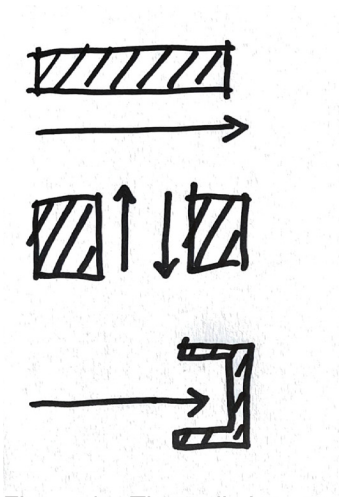


Figure 45: Three distinct types of circulation (Ching 2015)

large. The final design of the interventions' should feel like a part of the urban fabric - not separate from it.

Figure 46: The Idea of Inhabited Circulation in the City

Scale of the Campus

The inhabited circulation on the campus scale (Figure 48) determines how the design interventions (the Welcome and Accessibility Centre, the Urban Park and the Inhabited Circulatory bridges) are situated and shaped. Much of the circulation analysis at the campus scale was already completed in Chapter 4 - Looking at Sexton Campus. Specifically, there were conclusions made about major gateways, intersections and pathways. But to achieve more precise idea of where the design interventions are located and their potential square footage, three more layers of circulation analysis were added to the campus site plan, analyzing: (Figures 45 & 49) pass-by circulation (which helped determine paths of circulation where one passes by buildings); second pass-through circulation (which helped choose paths of circulation going into and cutting through buildings); and finally, terminate circulation (which helped

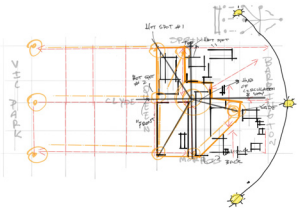


Figure 47: Sketch of the circulation on campus

determine pathways of circulation with dead ends.) Several conclusions about the locations of significant gateways and buildings on campus were drawn as a result of this analysis (Figure 49). The heart of the campus could be viewed as the Civil and Resource Engineering Building and the IDEA Building as they have the most circulation passing by, through, and terminating on campus. As also seen in Figure 49, more direct circulation is noted from the corner of Spring Garden Road and Queen Street and in the adjacent pathways of the School of Architecture. Overall, the additional look-through of Sexton Campus' circulation helps determine the potential form, direction, and placement of the design interventions.

Figure 48: The Idea of Inhabited Circulation on Campus

Scale of the Individual

There is already great use of Inhabited Circulation at the scale of the individual on Sexton Campus. In particular, the IDEA building houses spaces to relax and study along pathways of circulation (Figure 50), workshops with precise openings to see the inhabitation within (Figure 53) and

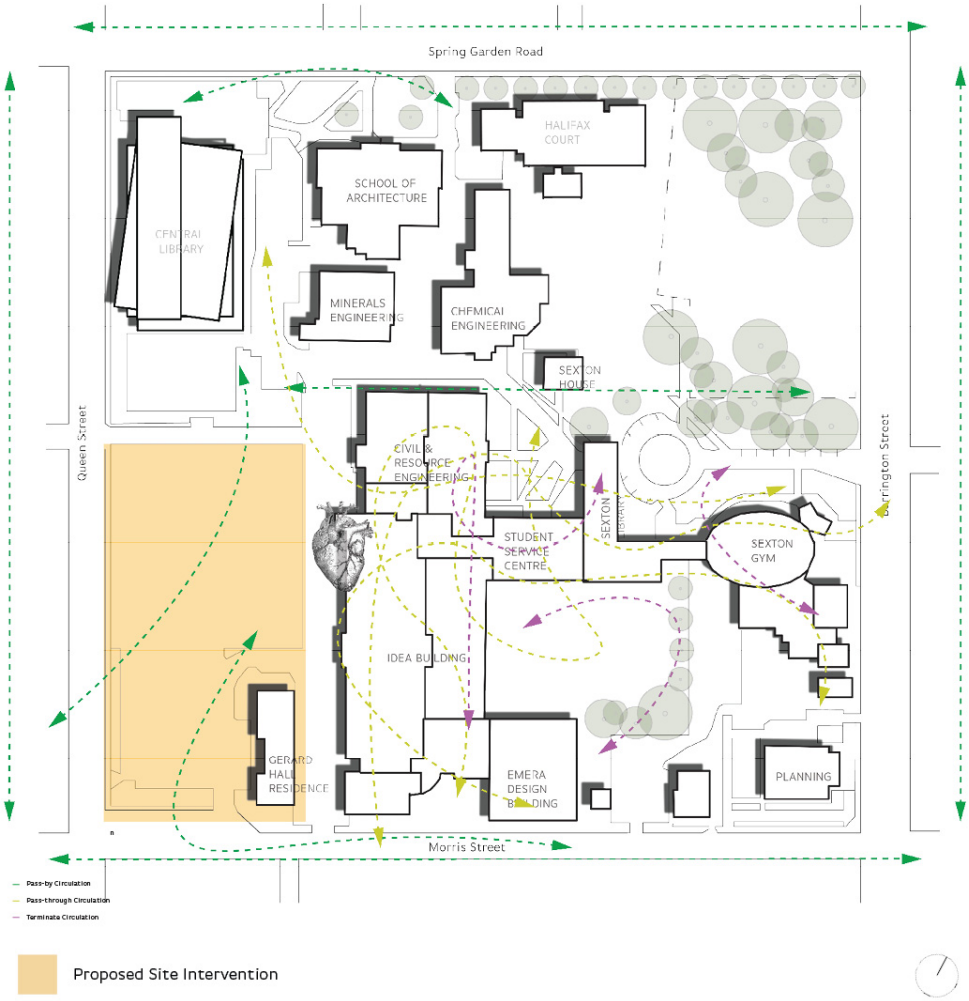


Figure 49: Scale of the Campus and the Individual Site Analysis

a view of internal bridges in the main hallway signifying connections throughout the building (Figure 52). Figures 50, 51, 52 & 53 are moments of opportunity to use and access welcoming learning spaces. Specific spaces within the Welcome and Accessibility Centre hope to achieve the same results as these moments through the scale of the individual. Additionally, the intervention of the inhabited circulatory bridges will take the idea of the bridges used in the IDEA building and merge it with spaces for study, relaxation, and other activities rather than it simply being a

Figure 50: IDEA Building - study spaces along circulation

Figure 51: IDEA Building - seating along stairway

Figure 52: IDEA Building - view of bridges in main hallway

Figure 53: IDEA Building - view of the workshop, the “Maker Space”

walkway for moving in and out of the campus. Furthermore, the analysis of inhabited circulation at the individual level made it clear that the resulting interventions of the thesis should not state that the current campus buildings are useless and be dismissed. Instead, reinventing the campus through inhabited circulation will enhance the programs and services already on campus. In particular, all three interventions aim to funnel everyone onto campus in an inclusive and welcoming way while creating a synergy so that all buildings on campus feel connected.

Figure 54: Inhabited Circulation at the Individual scale - wooden louvers suggest areas of open and private space - larger apart is open, closer together is private

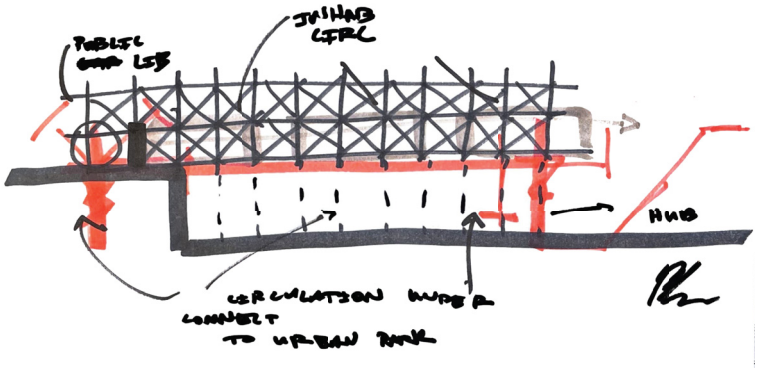


Figure 55: Sketch of the inhabited bridge

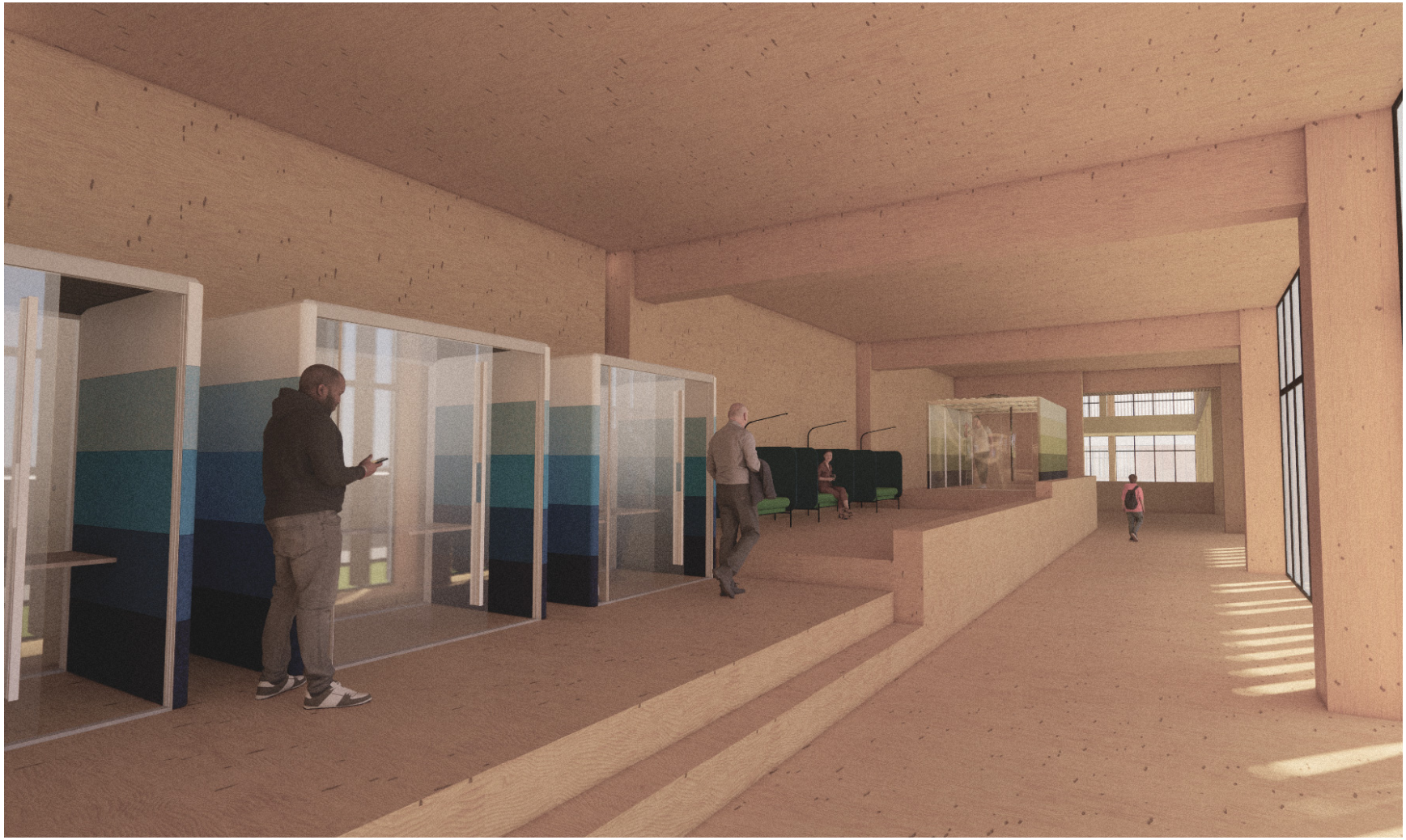


Figure 56: Concept render of using inhabited circulation at the scale of the individual in the inhabited bridge

Chapter 7: The Interventions

Figure 57: Opening render of the three interventions together

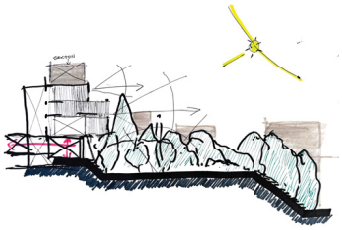


Figure 58: Section parti of the centre

Reinventing the Campus

The goal of the thesis is to better welcome, support and include individuals with LDs on campus. Through research on the diagnosis and stigma associated with LDs and exploration of the variety of services/accommodations offered, an opportunity to reinvent the campus has emerged. The prospect is to keep the intentions of inclusion while, at the same time, define the campus not as a private institution, but as a core component of the urban fabric. In doing so, people with LDs are woven into everyday public activities and are offered an opening to be better understood and de-stigmatized through three interventions:

- The New Urban Park
- The Inhabited Circulatory Bridges
- The Welcome and Accessibility Centre

As a result, the campus becomes a space used by everyone, not just university members. This chapter will examine how the campus can be reinvented through the implementation of the three interventions and how they work together in the form of a master plan.

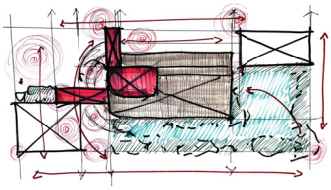


Figure 59: Top view parti

New Urban Park

First the interventions should be something more than a series of buildings added on campus with no real motivation, purpose, or connection to the existing urban fabric and landscape. The urban park is the intervention that is woven into the existing urban fabric and allows the interventions of the bridges and the centre to be present and connected – not just additions. Specifically, the urban park will allow the campus to be seen as an extension of the urban fabric and not an exclusive institution. Figures 43 and 44 show that it aims to merge circulation pathways from the urban fabric and within the campus. In turn, it allows the characters of the public, not just the characters of the student, to easily enter and access the two remaining interventions without feeling

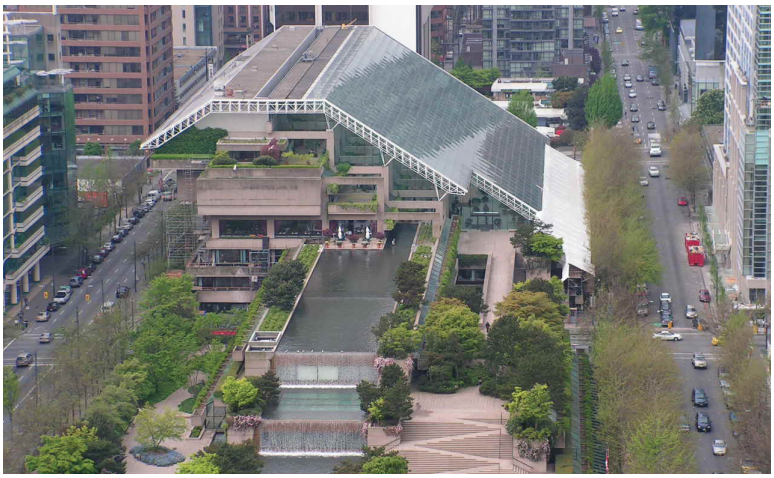


Figure 60: Robson Square - inspiration for how the urban fabric can weave into the campus fabric (RAIC, 2011)

Figure 61: The Urban Park and the Welcome and Accessibility Centre

Figure 62: Render of the uban fabric weaving into the campus fabric

Figure 63: Inspiration for Architectural Condition 1 - UBC Gateway (Perkins and Will 2023)

that the surrounding architecture belongs exclusively to the university. It belongs to them (Figure 64).

The urban park primarily uses inhabited circulation at the scale of the city, but at one crucial architectural condition, it uses all three scales.

Architectural Condition 1: Inhabited Circulation in the Urban Park

Highlighted in the masterplan (Figure 91), part of the urban park grows out of the ground, meeting the heights of the bridges and the second level of the centre. The aim is to make this park corner use all scales of inhabited circulation (Figure 64). The landscape and vegetation represent the scale of the city, the terraced decks represent the scale of the campus, and the act of going up and down the stairs, or simply circulating on them, is the individual scale (Figure 65). The landscape and vegetation of the urban park on this corner do not then become a leftover patch but rather, becomes part of the park that allows wooden decks for circulation and inhabitation to flow out of it. The decks offer room for circulation and inhabitation (Figure 65).

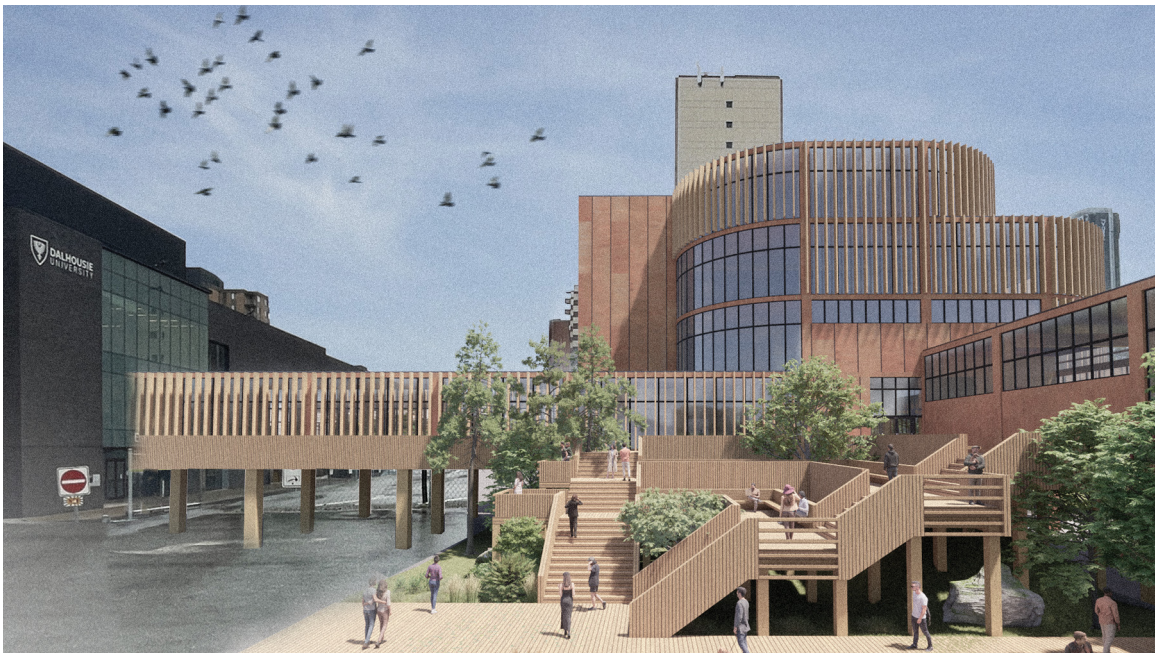


Figure 64: Condition 1 - view 1

Figure 65: Condition 1 - view 2

In particular, the staircases in this condition are not just a means of getting from one level to another, but rather they are areas for inhabitation. Specifically, this condition emphasizes the importance of continuity when using inhabited circulation (Figure 66, 67 & 68). Everything is one

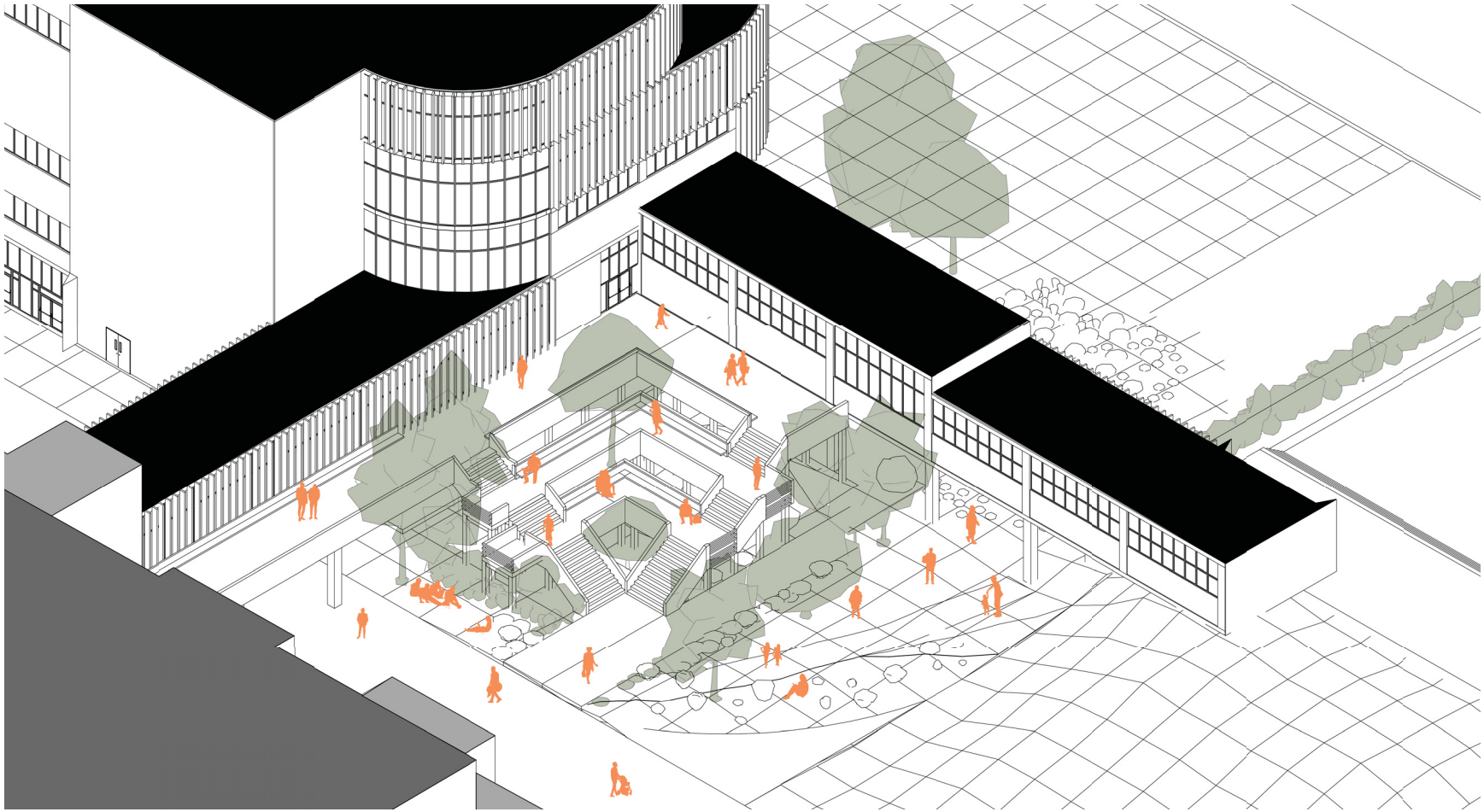


Figure 66: The Inhabited Landscape Urban Path

Figure 67: Condition 1 - the pathway and stair growing out of the landscape

Figure 68: Condition 1 - vegetation and inhabited circulation

medium; therefore, everyone inhabits the same medium. Everyone is equal and everyone is included. This condition aims to be viewed as a single system welcoming everyone. The urban park is not an extra park on the Sexton Campus, rather it is one that reflects the urban fabric of Halifax

flowing into Sexton Campus, which allows and encourages an inclusive and welcoming environment.

Bridges

The second intervention, a series of bridges, uses inhabited circulation mainly at the campus and individual scales. It connects significant areas of circulation and way-finding on campus while containing inclusive and welcoming spaces for inhabitation.

Figure 69: Entrance to the bridge on the Halifax Library platform

Architectural Condition 2: Inhabited Circulation within the Bridge

In the landscape urban path (Condition 1), the landscape informs the shape and function of the terraced decks, and the stairs become inhabited spaces. The landscape, vegetation, the material and form of the architecture are one. The same approach must apply to the interior of the interventions, particularly to the bridges and the accessibility centre. In particular, in order to define the inhabited circulation, the interior architecture should not be treated as a shell with furniture.

The architecture should inform the inhabited circulation. Metaphorically speaking, the chair within the interior should

not be just an object; the architecture should be the chair. To grasp this challenging design aspect of inhabited circulation, I began to approach the interior of the bridges with its various programmatic, structural, and architectural elements as a large slab of marble. As shown in Rodin's Orpheus and Eurydice (Figure 70), the human figures grow out of unfinished chunks of marble. The figures are distinguished from the original marble due to the polish and finishing, but all is borne out of same marble slab. This kind of continuity and subtle distinguishability (or awareness) will allow the bridge to successfully harness inhabited circulation. For

Figure 70: Opheus and Eurydice (Rodin 1893)

Figure 71: Louis Kahn's Reading Desks (Jaureguiberry 2020)

example, the seating within the bridge – whether decorative, programmatic or structural – must must grow out of the architecture. This approach will also shape the path of circulation and the type of inhabitation within the bridges. A perfect example of using this condition within the bridge is the reading desks (inspired by Louis Kahn's Reading Desks - Figure 71), seating, and architectural features that mimic

Figure 72: Treating the interior of the bridge as a slab of marble

the idea that everything is carved and sculpted, not simply furniture placed within a shell (Figure 72).

Overall Design of the Bridges

Each bridge is designed to provide spaces for circulation along the pathways. There are three bridges (Figure 73) – one connecting the platform behind the Halifax Library to the centre (Figure 73), another runs out of the centre and

Figure 73: Site drawing of the bridges on campus

into the entrance of the IDEA building (Figure 73), and the last bridge provides a direct pathway from the opening of Gerard Hall Residence to the back entrance of the IDEA building (Figure 73). The bridges provide more opportunities to enter and navigate the campus from the urban park, and they also offer inhabited spaces for everyone to use with no restrictions on who may use them.

The bridges are a response to the design of the current accessibility service centre on the Sexton Campus (Figure 1). There are two main sections in the bridge – space for study and areas for presentation or lecture (Figure 74). These sections are open along circulation pathways but are carved and sculpted out of the structure and the bridge's

architecture. It allows the circulation to directly flow into these activities of inhabitation (Figure 75, 76 & 77). In turn, the bridges prime the design aspect of complete continuity for the centre and enhance what inclusivity can mean in educational and public settings.

Figure 74: Section 1 of the bridge - study spaces along circulation

Figure 75: Section 2 of the bridge - temporary lecture hall along circulation

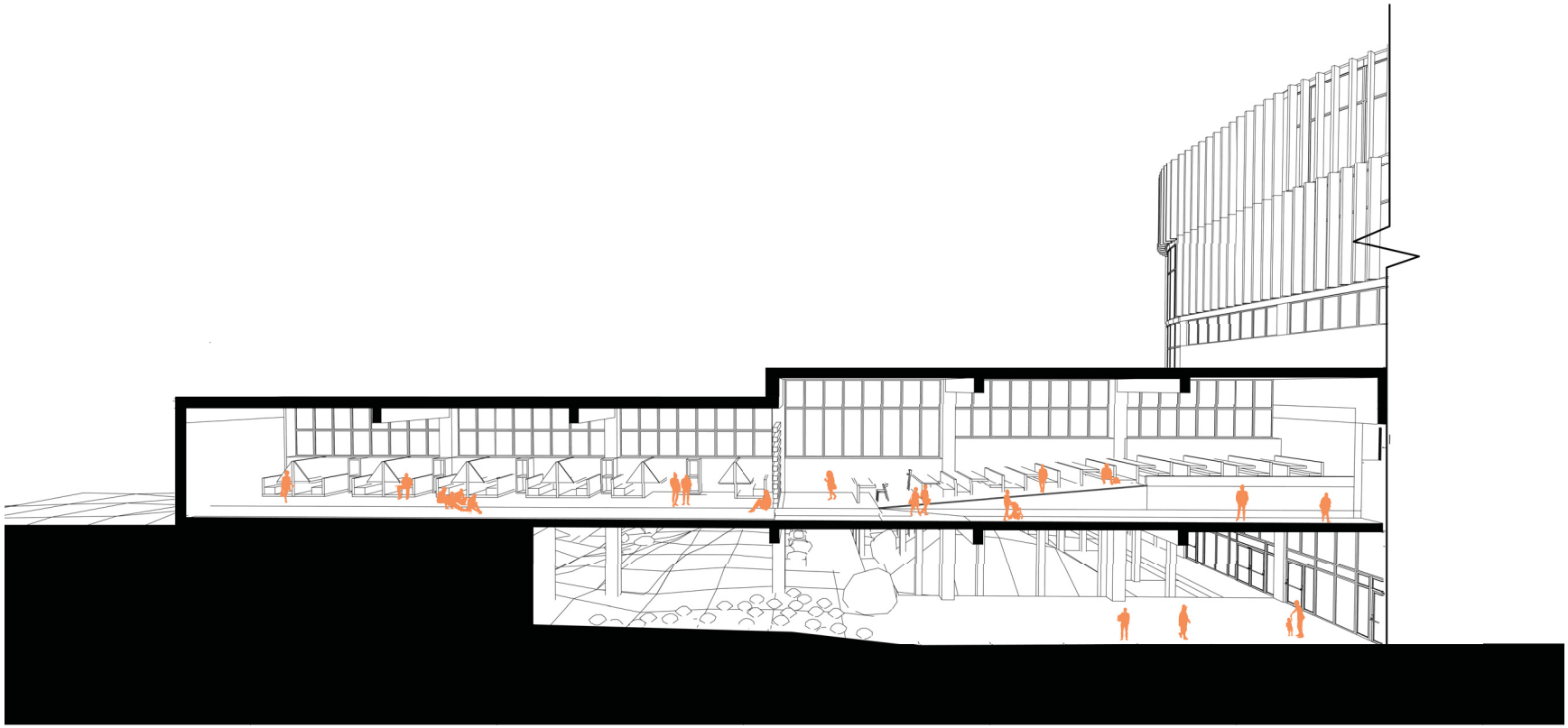


Figure 76: Inhabited section of the bridge

Figure 77: Subtle differentiation in the same material with the use of textures and finishing

Welcome and Accessibility Centre

The Welcome and Accessibility Centre is an intervention that does not favour one scale but equally uses each throughout. The centre's core function is to provide open, welcoming, and enriching spaces for accessibility services on Sexton Campus. The centre's design and site placement seeks to challenge that of the current accessibility office on Sexton Campus (Figure 1). Transparency, inclusivity, support, and perhaps the impression of empathy and understanding is not represented in the location and architecture of the accessibility office shown in Figure 1.

The Welcome and Accessibility centre should embody equity and inclusivity and convey a sense that each person who enters its space is worthy of respect. As it relates to inhabited circulation, the centre utilizes the scales of the student, the individual and the public and he centre is moulded out of the first two interventions (the urban park

and bridges). The park brings in the city and the bridges provide navigation and pathway circulation but also spaces for inhabitation.

The centre provides the necessary accessibility services on campus and serves as the central station to navigate and use the rest of the campus (Figure 78). Now all three interventions are working together and the centre is not just another building stationed on campus.

However, at its core, the Welcome and Accessibility centre animates the idea that accessibility services and support can benefit not those with LDs, but everyone. The centre levels the playing field.

Architectural Condition 3: Inhabited Circulation within the Centre

At first glance, the essential spaces may be interpreted as the accessibility offices, the new exam centre, the break space, and the mezzanine for study and work. These spaces are crucial; however, on their own, they visually have no connection to the continuity created by the urban park and the bridges. For example, it makes sense that the urban park steered the creation of bridges. It also follows that the park and the bridges guided the creation of the centre. But the accessibility office, the exam centre, the break space, and the mezzanine on their own, are programmed spaces. There needs to be a space within the centre that allows these programmed spaces to be connected to the first two interventions. This connecting space is the ground floor atrium. Within the centre, the ground floor is where visitors will have first contact. It is the point where people decide where to go, what to inhabit, and how they will inhabit it. For many, it is also the place that will define the central node

Ground Floor:

- Main Atrium Space - 1
- Front Gates - 2
- Washrooms
- Machine Room

Floor 2:

- Inhabited Bridge from Halifax Library Platfrom to Floor 2 Mezzanine - 3
- Accessibility Office 1 - Accommodation and UDL Services - 4
- Inhabited Bridge going directely into Floor 2 of the IDEA building - 5
- Washrooms

Floor 3:

- Learning and Study Mezzanine - 6
- Accessibility Office 2 - Psych Assessment Services - 7
- Washrooms

Floor 4:

- Exam Centre and Learning Commons - 8
- Washrooms

Floor 5:

- Break and Recreation Space - 9

Figure 78: Master section of the Welcome and Accessibility Centre

Figure 79: Carrara Marble Quarries - Italy (Burtynsky 2016)

and wayfinding centre on campus. It stands to reason then, that the ground floor harnesses the inhabited circulation design aspect of first two interventions – namely, treating the architecture as something that flows and grows and that is seen to be carved or sculpted out of a form (Figure 80).

The entire ground floor is treated as a large, terraced stair. The terraced stair along with ramps grow out of the tiled ground and bleed into the structural beams and columns of the centre (Figures 83 & 85). It represents that the inhabited circulation is continuous, but there are moments of transition when travelling to other floors. In some ways, the ground floor stands as an interactive monument for what the design strategy of inhabited circulation means and how it should be used on Sexton Campus.

It commemorates a commitment to inclusion and welcoming and represents how we can rethink spaces to include everyone on campus.

Figure 80: Point of view from the bridge going into the centre

Figure 81: The inhabited terraced stair growing out of the ground level

Figure 82: Section of the centre showing condition 3 and its inhabited circulation

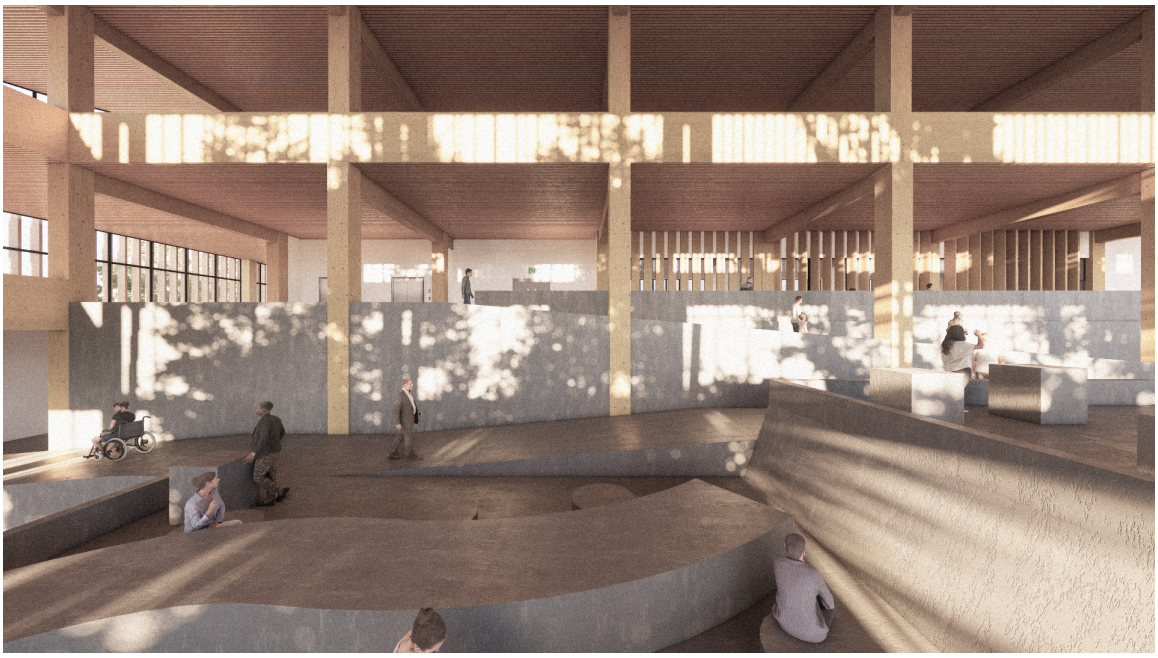


Figure 83: The inhabited terraced stair has features to use the space for seating, working, and most importantly circulation growing out of the ground

Figure 84: The inhabited terraced stair stretches most of the length of the centre maximizing the amount of light and the amount of open visibility from a visitors point of view (POV)

Figure 85: The terraced inhabited stair weaving into the circulation pathway parallel to the accessibility office

Figure 86: Accessibility office - louvers represent openness but also a sense of privacy and confidentiality when it comes to accessing needs specific to an LD or accessibility plan on campus

Figure 87: The exam centre in the Welcome and Accessibility Centre with a series of temporary pods for private examination, space for proctoring, and a subtle addition of wooden louvers to separate exam space to space for waiting until an exam begins.

Concluding the Design of the Centre

The Welcome and Accessibility Centre is emblematic of the values of inclusion and respect and animates the important work of the Dalhousie Accessibility Office as it strives towards a barrier-free Dalhousie community (see Chapter 5.) It was essential to shape the centre as a frequently used public building, similar to the IDEA building and to position it as a space to be used by everyone – not just by individuals who need to access some of its programs such as accommodation support or private examination rooms. Condition 3 helps bridge the public access and usability to the accessibility offices, the exam room, and the break room. The centre presents these spaces as being helpful and useful to everyone.

In discussions with my fellow students, those who did not have an LD or an accessibility plan expressed that they felt they may have

had better results on examinations if they had access to an examination centre with private rooms rather than taking an exam with 500+ students in a cavernous university arena (Figure 88). Additionally, they said that they would like to see more campus spaces that are not reminders of the stress and grind of preparing for an examination, such as areas with comfortable seating where they could relax, play games, or enjoy time with friends.

Figure 88: Exam arrangement in the DalPlex (Froese 2013)

Figure 89: Breakroom in the Welcome and Accessibility Centre

Figure 90: Space for studying on the mezzanine

Master Plan

The master plan is a visual tool. It aims to show how the three interventions work together and how inhabited circulation is distributed. Additionally, the master plan adds context to what has been outlined in Chapter 6 – The Strategy.

The urban park replaces the current Sexton Campus parking lot between the Halifax Library platform and Gerard Hall Residence (Figure 91). It stretches along most of Queen Street and diverts into Clyde Street, stopping in front of the Civil and Resource Engineering Building and part of the IDEA building (Figure 91). The expanse of the park allows for largest opening to the campus so visitors can use more than just the entrances off Clyde and Morris Streets. One would be able to use any part of the park to enter the campus – much like a natural forest where there may be many entry points.

The three bridges grow out of the park and act as interactive gateways to navigate the campus. An interactive inhabited

landscape pathway emerges from the park, intersecting two bridges and the centre. It adds a level of continuity to the design strategy of inhabited circulation. As mentioned, the urban landscape path shown in condition 1 is not just the continuation of the urban park, but it is an entirely new urban park that is goes deeper into the architectural fabric of the campus. It creates a new courtyard near the entrances of the Civil and Resource Engineering Building and the IDEA Building.

Finally, in the master plan, the centre operates as a central wayfinding point of the campus. It is meant to be seen from different angles from the urban fabric of Halifax and ultimately activates the use and functionality of all other buildings on campus.

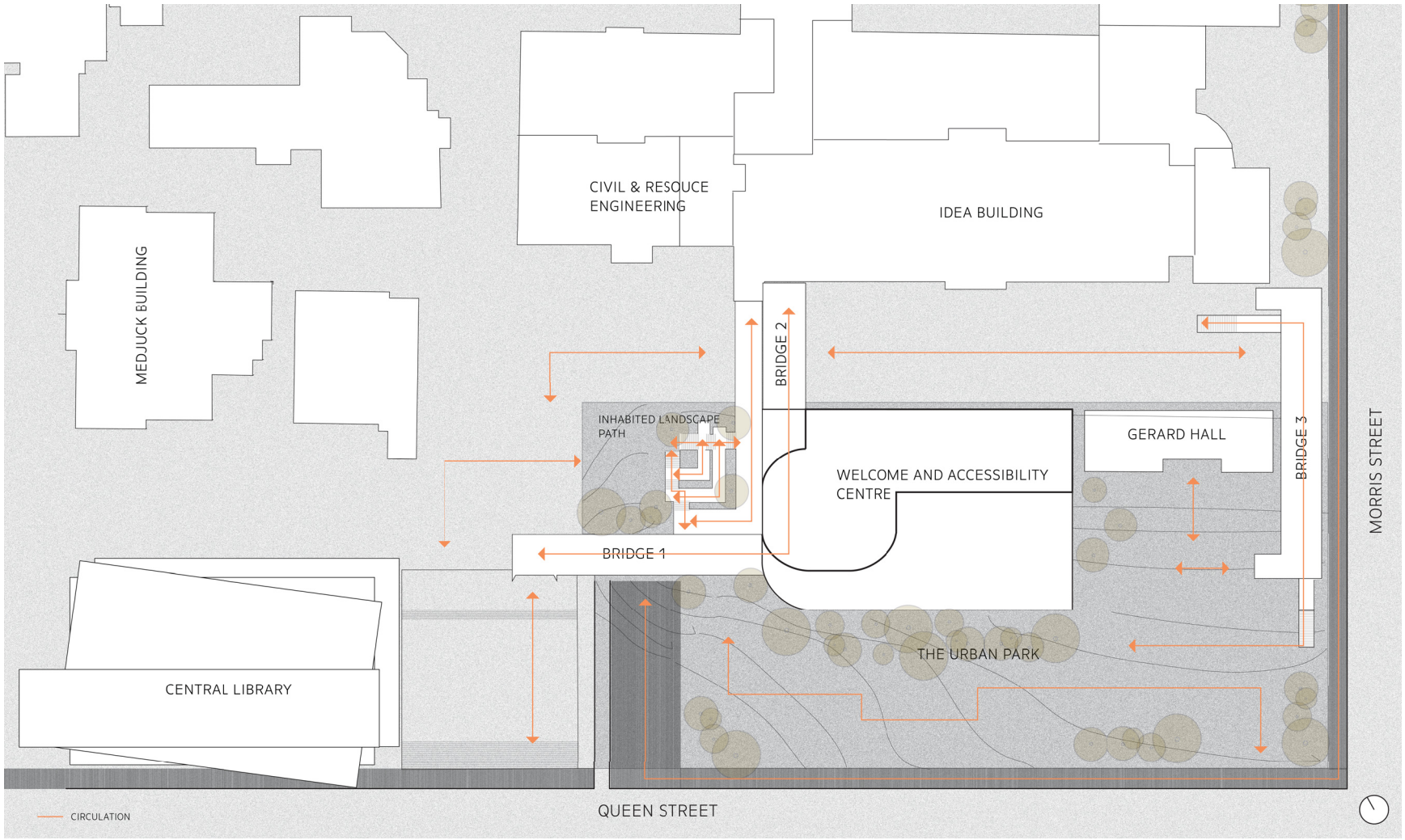


Figure 91: The master plan showing all three interventions together

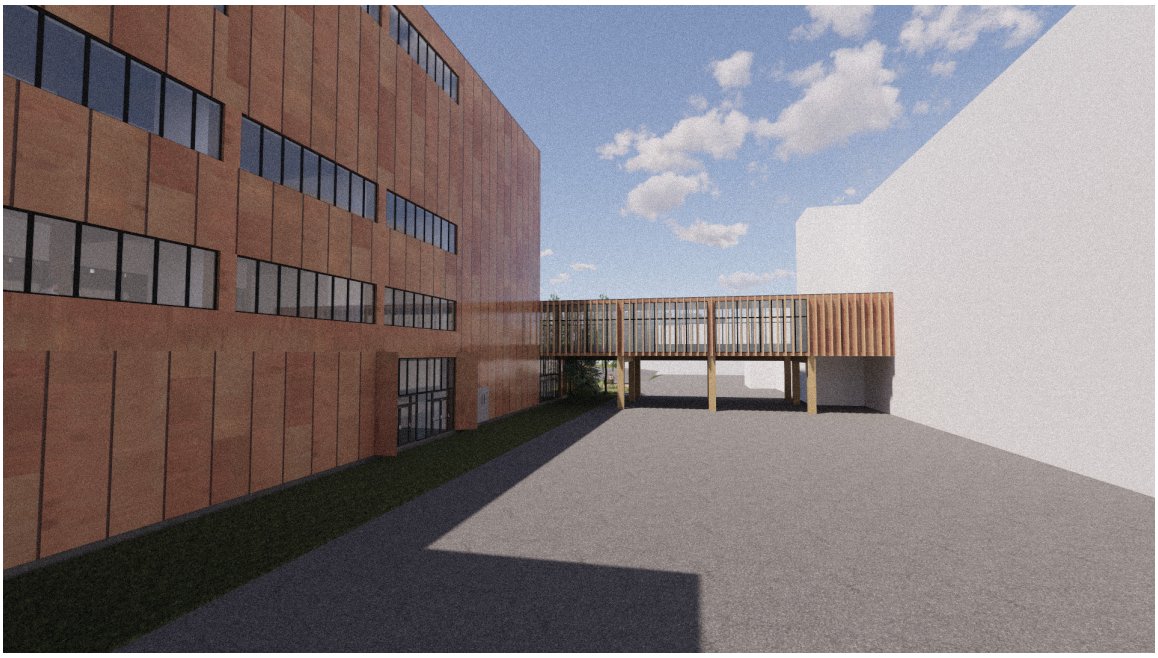


Figure 92: View of bridge #2 exiting the centre and going into the IDEA building

Figure 93: View of the bridge #3 off Morris Street near Gerard Hall

Chapter 8: Conclusion

Initial Inspiration

We live in a time where diversity, access, inclusion and equity are high on cultural, social and political agendas. Inclusion and access are at the heart of my thesis and the ideas that inspired the design flowed from of my personal experience.

As a young child, I was diagnosed with a learning disability (LD). Often, I was asked whether I had ADHD or dyslexia. My LD is simply a different way of receiving and processing information. It is invisible.

However, my LD became far more visible when support was implemented in the classroom. These supports aimed to help me, but they had the inadvertent consequence of singling me out. As I grew older and more aware, I began to experience the effects of stigma and the pain of social exclusion.

I am privileged to have been surrounded by supportive family members, educators and other professionals who encouraged and motivated me and assisted me to re-frame the LD stigma so that I could focus on working towards fulfilling my potential. I have an LD – it is not who I am.

Not everyone with an LD has access to a supportive community. When you are affected by an LD, it can be incredibly isolating, and you often face negative attitudes – particularly in an academic setting. A lack of awareness on the part of those without an LD may lead to barriers that impede your education journey, employment opportunities and social pursuits. Although support was present from my

family and through the educational system, I did find it hard at times to make friends because of the labelling culture surrounding LDs. I was often excluded from final group work because someone thought I was not “smart” enough. I cannot imagine what it is like for those without any kind of support.

My thesis comes out of a strong desire to help foster a more hospitable environment that would not only better serve individuals with LDs, but is also universally welcoming.

The global pandemic altered so much for so many. For students, our scholastic journeys dramatically changed as we pivoted to a virtual environment. Suddenly we were all thrown into a shared experience of isolation. A little over three years have passed since the pandemic was declared, and we are all readjusting to life “in-person” and have a renewed appreciation for the shared human condition and what it means to support each other.

I have dedicated the last year and a half of my academic life to this thesis: “Re-inventing the Campus Through an Understanding of Learning Disabilities”. At times, the work has been difficult and emotional. It was hard to revisit those times and places where I allowed stigma to lead to false narratives about myself, diminishing my self-confidence and limiting my possibilities. Sometimes revisiting those moments made me doubt if proposing this thesis was even worth it. But the process has also been cathartic, healing and an opportunity for growth. I have learned so much more about myself, and importantly, about others and the ways in which they deal with their LDs – each of us is unique and we each have something to contribute.

The three interventions of the re-invented campus serve as a gateway to designing supportive environments –stepping stones. Within the design, some elements aim to capture light in different ways to bring moments of privacy and at the materiality level, ignite feelings of warmth and comfort. My re-invention of the campus cannot address everything surrounding LDs. Additionally, design – as universal as it may be intended, cannot be the solution to everything – particularly when it comes to subjects as complex as accessibility and inclusion.

Next Life

The work is never done, and it will evolve. I hope that this concept of a re-invented campus – where we can build and nurture connections with each other – will spark conversations around improving accommodation and access guidelines and stimulate ideas around conducting seminars that better support LDs. I wish it to be seen as a launch pad for architects, designers, students, educators and people who support others, to create new and beautiful environments.

My Dalhousie University years have been some of the best of my life. There have been challenges along the way and I have grown as a result. I have enjoyed the constant state of learning and pursuit of new goals. I have found a community of supportive friends and faculty members in the Faculty of Architecture, and I have been blessed to have had the opportunity to express myself freely and creatively.

Perhaps one day, we will all walk through a re-invented campus where we feel welcomed, supported and included.

Appendix A: Case Studies

Gallaudet University was used again as a case study for designing the intervention. Still, more on the scale of the individual, specifically looking at a space in one of its residences called the “The Living Room.” This room caters to people who are deaf or hard of hearing spatially and has a subtle terraced design to separate spots or sections students can use (Figure 95). But more importantly, it can transform into a lecture hall, with the terraced sites becoming seating areas similar to a lecture hall (Figures 95 & 96).

The Student Welcome and Resource Centre at Humber College (Toronto, Ontario), designed by Moriyama and Teshima architects, served as a case study for the scale of the city. There was the problem of Sexton Campus not having a clear “quadrangle” or welcoming area. In this case, Humber College uses a trellis extending from the front facade to welcome and situate students on campus (Figure 97). It provides an opportunity to use the trellis surrounding space as a space outside the welcome centre (merging spaces rather than pure separation).

A project that really helped the idea of sculpting the inhabited circulation of the architecture for the three interventions was the High Line by Diller Scofidio + Renfro Architects. In Figure 99, the benches grow out of the ground.

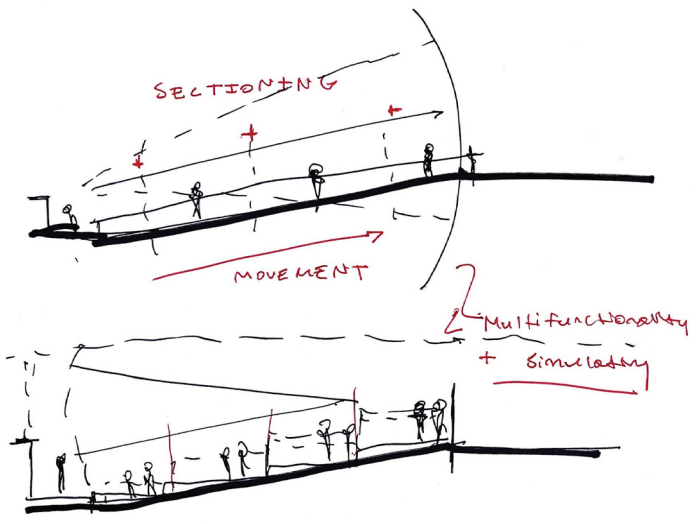


Figure 94: Gallaudet University Living Room Analysis

Figure 95: The central “living room” doubles as an auditorium (Patel 2013)

Figure 96: Gallaudet University - The Living Room Transformed (Patel 2013)

Figure 97: Humber College Welcome and Resource Centre (Moriyama and Teshima Architects 2016)

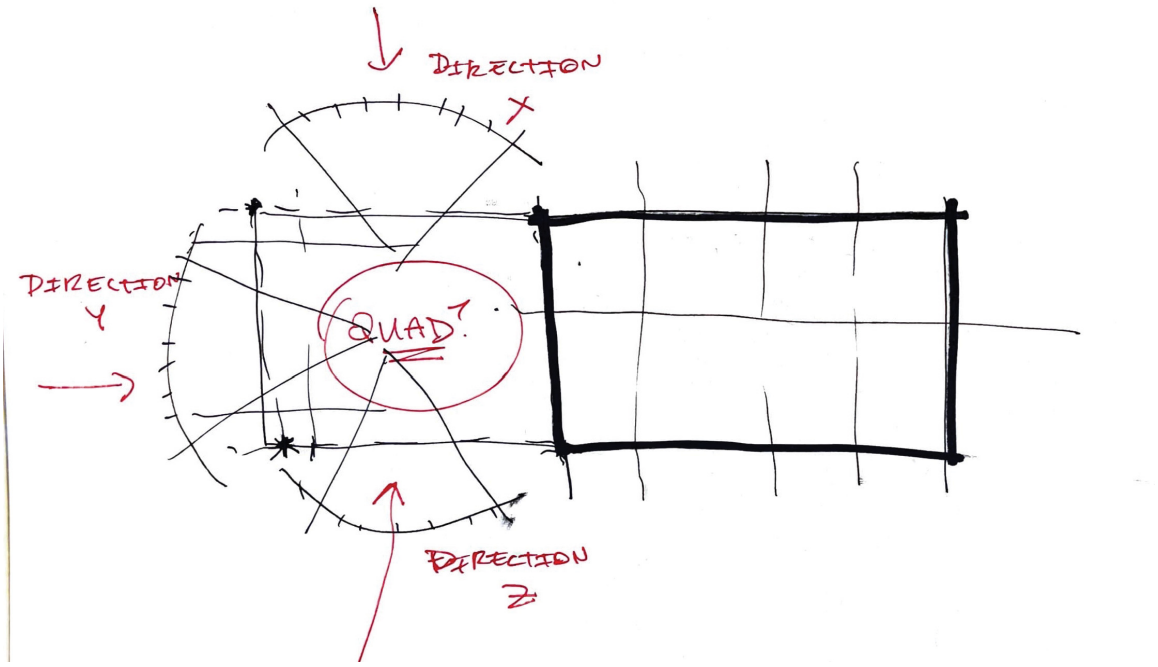


Figure 98: Humber College Welcome and Resource Centre Analysis

Figure 99: The benches growing out of the ground - the High Line (Diller Scofidio + Renfro 2009a)

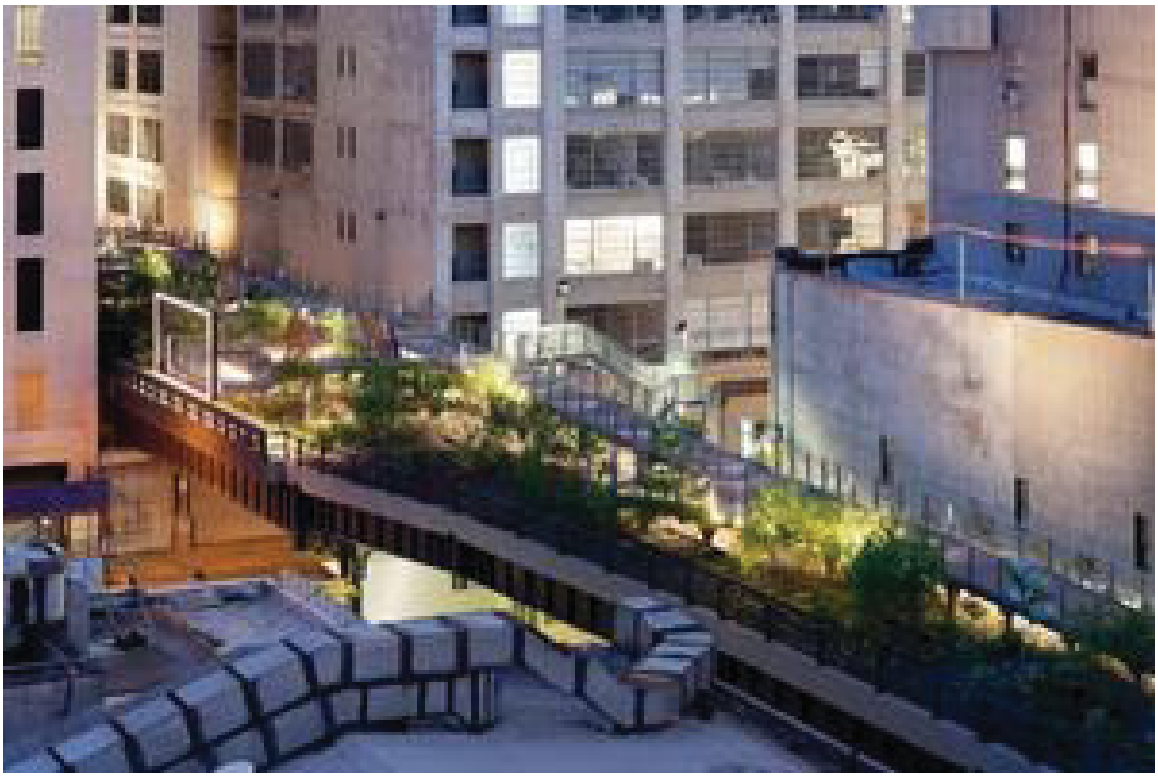


Figure 100: The High Line (Diller Scofidio + Renfro 2009b)

Appendix B: Wish Images

Figure 101: “Is the solution just another building?”

Figure 102: “How do we approach?”

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